J. XXVI Goo

1962

A

PRACTICAL COMPENDIUM

OF

MIDWIFERY.

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A

PRACTICAL COMPENDIUM

OF

MIDWIFERY;

BEING

THE COURSE OF LECTURES ON MIDWIFERY,

AND ON

THE DISEASES OF WOMEN AND INFANTS,

DELIVERED AT

ST. BARTHOLOMEW'S HOSPITAL,

BY THE LATE

ROBERT GOOCH, M.D.

PREPARED FOR PUBLICATION,

BY GEORGE SKINNER,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS, LONDON.

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PRINTED FOR

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TO

DR. PRING, M.D.

BATH.

DEAR SIR,

To inscribe this work with your name is so much an act of justice, that it can scarcely be allowed to be also an expression of gratitude.

I was assisted with your pen, and with your suggestions, in executing a sacred trust, that nothing unworthy the character of the late Dr. Gooch should appear in these pages; nothing that could support or add to it, should be omitted.

The public will appreciate, every day more exactly, by the increasing reputation of your own writings, the honour, and advantage, which I derive from your friendship and your name.

I am, dear Sir,
Your obliged friend,
GEORGE SKINNER.

Bath, Oct. 24. 1831.

PREFACE.

THE Editor of this Volume attended the Lectures on Midwifery, delivered at St. Bartholomew's Hospital, by the late Dr. Gooch. In common with many other pupils he took notes of these lectures; and that with a minuteness which comprised the most trifling particulars. The abilities of the late Dr. Gooch are now so justly and so highly appreciated, that it will be superfluous to say any thing in recommendation of instructions proceeding from such a teacher.

The divisions of the work will perhaps be thought at first sight not unexceptionable. But it was found impracticable to adopt any other, which would distinguish the several subjects by appropriate titles, without departing greatly from the original plan of the lectures. This plan has been adhered to as strictly as possible: the author's terms and expressions have been retained whenever these were peculiar or characteristic, and on all occasions his meaning has been preserved with the most scrupulous fidelity.

A few Notes are added, chiefly for the purpose of introducing such illustrations as may be afforded by the Editor's own experience, and of remarking upon any modes of practice which have been proposed or revived since the time when these lectures were delivered.

For any faults of which the Editor himself is not conscious, he claims the indulgence of the public;

trusting that the care and pains with which the work has been prepared for publication, will be sufficiently apparent to form an apology.

It may be proper to add, that these lectures are published with the consent of the Executor of the late Dr. Gooch, and that the conditions of their publication are such that his family have an interest in their success.

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ERRATA.

Page 13. line 1. of note, for "excitements" read "excitants."
82. line 7. for "heart-rug" read "hearth-rug."
133. line 19. after "plug" read "into the vagina."
213. line 2. of note, for "case, owing" read "case, where owing."
220. line 6. for "perforation" read "perforator."
255. last line, for "placenta" read "placentæ."
260. line 4. from bottom, for "placenta" read "placentæ."

A

PRACTICAL COMPENDIUM

OF

MIDWIFERY.

LECTURE THE FIRST.

ON THE NATURAL FUNCTIONS, AND ON THE DISEASES OF THE FEMALE ORGANS OF GENERATION.

Section I. *On Menstruation.*

I have first to describe the functions of the female sexual organs in their healthy state, and then their morbid deviations.

The genital organs of the female child, are very different from those of the adult. The uterus of a child is about the size of the little finger; its parietes are thin, and pallid. The ovaries also are very small, in comparison with those of the adult, which latter are as large as a pigeon's egg. The sexual organs in children are not only small, but they perform no function, pour out no menstrual fluid, excite no passion; and, if the act of coition should take place, no conception would follow. Although the girl may have attained the size of a full grown woman, the sexual organs

continue diminutive, and exercise no function, until the age of puberty. At this period they undergo a considerable change, both as to development and function: the external appearance of the female is much altered; and if you have not seen her for some months, you remark how womanly she is become; her pelvis is enlarged, her breasts are full, and there is a general rotundity of the body. These appearances do not continue long before she feels a fulness and tightness in her head and breasts, pain, weight, and dragging sensation about the loins and in the region of the uterus, with a hot skin, and a rapid pulse. These symptoms evidently arise from local irritation in the uterus: they will subside without being followed by any discharge; but in a short time they recur, and continue for a few hours, when there issues from the vulva a fluid, which at first appears like water tinged with blood; but after a few ounces have been discharged, it becomes of a redder colour, and then ceases; when the above symptoms subside, and are succeeded by a sense of languor and faintness. This is the mode of the first occurrence of menstruation. At the end of some months the same symptoms return; and being repeated at some few periods, menstruation is established; this process recurring, with almost mechanical regularity, every month, unless pregnancy, nursing, or certain diseases, interrupt the natural functions.

The period of life during which menstruation takes place, is from about the age of fifteen to that of forty-five; some diseases do not interrupt it.

In the commencement, menstruation is generally attended with the before-mentioned symptoms; but

as the regularity of the function becomes established, the disturbance of the system, at the periods of its recurrence, diminishes. That it is about to take place, is generally known a few hours previously by a slight sense of fulness and tightness about the head, together with a sense of fulness, with shooting pains in the breasts. There is also great susceptibility of the nervous system, manifested by flushing of the face upon any slight emotion. Physiologists have endeavoured to explain the menstrual function; but the development of the organs which produce it has been sometimes overlooked. It has been said, that the moon has an influence on its occurrence; but if such were the case, all women would menstruate at the same time, making a sort of universal flood-tide; but as some or other women are menstruating every day, we may give up this notion of lunar influence. That this process depends upon plethora, seems also an objectionable explanation. They say, that a woman arrives at her full size, before which time there was a call for a supply of blood for the purposes of growth, which having attained its limits, the redundant quantity must be disposed of in some other way; and hence the menstrual evacuation. But men and animals also attain their full growth: this doctrine, founded on a supposed superfluity of blood, equally applies to them; yet they do not menstruate.

More modern physiologists say that, on the full development of the ovaries and uterus, the menstrual discharge commences. This discharge has by some been thought to proceed from the vagina; but during pregnancy, when the os tincæ is hermetically sealed, it does not occur. Sometimes, indeed, menstruation

takes place during pregnancy; but we must not draw our conclusions from one case out of a thousand, but from nine hundred and ninety-nine out of a thousand. In procidentia uteri, the menstrual fluid has been seen issuing *guttatim* from the os tincæ. This Dr. William Hunter has clearly shown; and if you ask females, who are troubled with this complaint, whence the fluid comes, they say from the chink at the bottom of the tumour. Farther proof has been obtained by examination after death. I was present at the examination of the body of a female who died of trismus: two days prior to her death she began to menstruate, and died while the menses were on her. I examined the uterus, and found a substance like currant jelly adhering to its inner membrane. From these facts it is sufficiently obvious that the menstrual fluid is poured out by certain vessels which terminate on the inner surface of the uterus. Morgagni perceived the mouths of these vessels in the uterus of a woman who was hanged during menstruation.

The quantity of fluid evacuated at each period varies in different females, and in different climates. In cold northern regions it is scanty; in this climate, moderate; in warm climates, profuse. It is very difficult to ascertain either by weight or measurement the precise quantity of this discharge. De Haen made enquiries among poor women, and found that they only used one cloth, which, when wet, was dried, and applied again. He then took a similar napkin dipped it in blood, dried it, and immersed it again. This experiment he repeatedly tried; and from it he deduces that from four to eight ounces, rarely ten, and most commonly about six ounces, of fluid are lost

at each period of menstruation. We call it blood: it is of the colour of blood, but has not all its properties; for blood invariably coagulates when at rest in the interior of the body. Even in aneurism it will coagulate, forming layer upon layer on the sides of the aneurismal sac; and impeding the passage of blood through the vessel, sometimes, by its accumulation, effects a spontaneous cure. But if the menstrual fluid be retained for months, or years, as it is in cases of imperforate hymen, it does not coagulate. In this case the fluid is still prepared, but does not escape externally. It is gradually augmented to an enormous quantity: at length the nature of the disease is discovered; the distended hymen is punctured; and quarts, perhaps, of the menstrual fluid are discharged, not coagulated, but of the consistence of treacle, differing from blood only by containing a smaller proportion of the coagulating principle. It has been thought, both by civilised and savage nations, that this fluid possesses poisonous qualities, of a kind so virulent or peculiar, that, if a menstruating woman walked three times round a garden, all the flowers would be blighted and the caterpillars killed; and the belief of its poisonous nature has prevailed among nations holding no intercourse by which it may be communicated from one to the other. A North American said, that if the saliva of a menstruating virgin were smeared on the bronchocele of a male, it would cure it. Females, in countries where these notions prevail, are separated during menstruation from the males, who carry their superstition in this matter so far, that, if the pipe should fall from the hand of a man who was smoking it, and be broken, the accident would be

imputed to its having been lighted at the hut of a menstruating woman.

The time of the first appearance of the menses varies in different climates. The usual period of the commencement of menstruation in this country is at about the age of fourteen; in colder climates, as among the Laplanders, its first occurrence is so late as twenty; and near the equator, so early as nine or ten years of age. A Dutch traveller says, that in Japan he saw a number of little girls with children either in their arms, or at their breasts; their juvenile appearance, contrasted with their maternal occupation, was very striking. At Java, females are married when only nine or ten years of age.

In this country, at about the age of forty-five the function of the uterus is nearly at an end. The discharge begins to grow scanty in quantity, and irregular in its returns, and at length entirely ceases. At this time the breasts diminish, the ovaries become smaller, the uterus is contracted to almost a schirrous hardness, the sensitive and conceptive functions are wanting; and thus the state essentially resembles that before puberty. After this period women very seldom conceive. Having thus described the functions of the female sexual organs in their healthy state, I am now to treat of their morbid peculiarities.

Section II. *Diseases of the female Organs of Generation.*

(a.) Chlorosis.

If in girls who have attained the age at which this change is customary, the sexual organs are not develo-

ped, a deranged state of the constitution occurs, characterized by peculiar symptoms. You may remark in a girl at the age of puberty, who does not menstruate, or but imperfectly, a waxy, tumid face, disordered digestive organs, palpitating heart on the slightest exertions, debility, and indolence, with an inactive mind and disturbance of the nervous system, an œdematous face at the breakfast-table, and at night œdematous ankles, a gradual subsidence of the swelling of the face as the day advances, and a depraved, though not deficient, appetite. To these symptoms are added a torpid state of the bowels, with perhaps clay-coloured evacuations. These symptoms constitute what is called Chlorosis, or retention of the menses. In addition to the other circumstances just enumerated, the quality of the circulating fluid is, in these cases, altered; blood has been taken by way of experiment, and it has been found to be of a pale red colour, and watery, like the juice of a cherry.

With respect to the pathology of chlorosis, the theory which has obtained the most extensive credit is that of Dr. Cullen; but it is perfectly groundless. Comparing the circumstances attendant on the development of the sexual organs at the usual period, with those when their customary development does not take place, he says, that the body is healthy and grows up naturally until puberty, but that it will go no further without the aid of the stimulus of the sexual organs, of which he considers the ovaries to be the most important: so that if these are developed and active, the natural state of health proceeds; if not, the whole system suffers, and the symptoms just mentioned are the consequences of such derangement. A

man or other animal, if deprived of the testes by castration, will become puffy, flabby, indolent, and relaxed, from an absence of the stimulus supplied by these organs; consequences somewhat resembling the state of chlorosis in the female, from an undeveloped state of the sexual organs. In opposition to this view I have to remark, that Mr. Pott, when operating on a woman for strangulated herniæ (one on each side), cut off the ovaries, which were contained in either hernial sac, thus spaying her to all intents and purposes. According to Dr. Cullen's theory she should have fallen into chlorosis; but she did not: she became muscular, and hairy, with a hoarse voice, and a masculine appearance. I knew the case of a female whose sexual organs at the age of puberty remained undeveloped; her breasts were flat, and the external organs of generation as small as those of a child; her appetite was bad, she ate but a penny roll in a week, and had a stool about once in a fortnight; at the age of twenty-eight she was about four feet high, and had no passions common to her sex. She ceased to grow at ten years of age, and at twenty-eight died of some affection of her chest. On examination, her ovaries and uterus were found as small as those of an infant; instead of becoming chlorotic from this diminutive state of these organs, she merely wanted the feelings natural to her sex.

The theory which appears to me the most explanatory and rational is, that chlorosis depends on a want of that constitutional vigour by which the sexual organs may be brought into action; that to this deficiency may be imputed the failure both of their development and functions. At the period of puberty

the constitution has not only itself to nourish, but it must have energy to rouse and excite to action a new set of organs; it must supply the materials for an increase of their growth, and all other purposes incident to their function.

I would ask who are the subjects of chlorosis? Are they the robust, florid, active, and vigorous females? No; in such the menstrual function is commonly established in the most favourable manner. The puny and delicate females are most disposed to it, who, before the age of puberty, could scarcely support the existing state of the system, which of course must be inadequate to supply any additional demand. This view of the pathology of chlorosis at once suggests the general design of cure, and derives confirmation from the success of the means employed for this end.

Chlorotic patients, although the disease under which they suffer may continue for months, or even years, if properly placed, and treated, will perhaps generally recover, though not all with equal rapidity.

The disease may terminate fatally by serous effusion into the chest, or other cavities of the body, accompanied by general œdema; or tubercles proceeding to suppuration may form in the lungs; and the patient may thus be destroyed either by dropsy or phthisis. Stupor of mind, despondency, and nervous irritation, may end in hypochondriasis and insanity. I knew a young lady labouring under chlorosis, who was about to be married; it was intended that the marriage should take place as soon as possible. The house was purchased, &c., but the nervous irritability incident to her complaint was so excited by the occa-

sion, that she became insane, and still remains so. Such terminations are rare, but phthisis and serous effusions are not uncommon.

In the treatment of this disease we must consult our experience, in order to know what objects are to be attained; and this will suggest principally three indications. First, to improve the state of the digestive organs, and consequently the general health. Secondly, to palliate symptoms. Thirdly, to excite the sexual organs by local stimulants. An emetic is sometimes given in the commencement, for the purpose of clearing the stomach of all irritating contents; and as the tongue is foul, the alimentary canal torpid, and the secretions unnatural, a purgative should also be administered. The emetic should consist of ipecacuanha, and the purgative of rhubarb, or aloes, with calomel. This purgative should be of an effectual kind; and after two or three repetitions of it, the dose may be moderated; as by giving one grain of calomel with four or five of aloes every other night, for about ten days or a fortnight, when the digestive functions will most probably be in an improved state, the alimentary canal will be cleared of its irritating contents, the secretions will be more natural, the tongue will be clean, and the appetite less depraved. You then give some slight tonics; as infusion of quassia with lime water, or the infusion of cascarilla with the subcarbonate of soda, as an antacid. These remedies may, for some time, be employed in conjunction with the laxative plan; and the stomach and bowels having been been brought into a healthy state, those remedies may be administered which promise more permanent benefit, such as the different preparations of iron;

still, however, in conjunction with so much aloes as will produce two evacuations every day. For example, six grains of the sulphate of iron, or twelve grains of the carbonate, with five or six grains of the watery extract of aloes, made into six or eight pills, may be given daily, in divided portions, with a light but nutritive diet of animal food, wine or porter, together with pure air. If living in a town or city, the patient must go into the country; regular exercise must be taken daily by walking, riding, or dancing; the two latter are to be preferred. The effect of exercise in this complaint is such that the complaint is sometimes cured by it alone; but without the aid of exercise, medical skill will be unavailing.

A lady who was extremely indolent, whose hands were always cold, &c., had exhausted the resources of her medical attendants, having gone through the regular routine of medicines without benefit. I ordered her bread pills, and made her go to a riding-school daily, and ride until she got into a complete glow of heat,—until the coldness of her hands was exchanged for warmth and perspiration. I told her that if she ever went to bed without having thus ridden during the day, she must say with the wise man, "*Perdidi diem*,"—I have lost a day. She used this horse exercise, took her bread pills, and was cured of her chlorosis by exercise alone.

With respect to dancing, there are many girls who, cannot walk the shortest distance without fatigue and violent palpitation of the heart, who can go to a ball and dance all night without much inconvenience. This is said to be owing to the agreeable sensations excited by the touch of their partner's hand, by which

the benefit of the exercise is rendered more certain. During the recovery of such patients, symptoms of congestion about the head will arise now and then; if so, do not attempt to relieve these symptoms by bleeding, but apply cold to the temples and head, omit the use of steel, and give the sulphuric acid, in any way most convenient, until the symptoms subside, when the exhibition of the steel may be resumed.

When effusion has taken place into the cavities of the body, occasioning difficult breathing, attended by œdema, and a scanty secretion of urine, diuretics are the most efficacious remedies; and of these the most reliance may be placed on digitalis, of which ten drops of the tincture, with twenty of nitrous æther, may be given three times a day. This medicine, by promoting the secretion of urine, relieves the breathing, and other symptoms, so successfully, that Dr. Hamilton, who was much struck with its effects, recommends it as the most effectual remedy in all the stages of chlorosis; supposing this disease to depend on a weakened state of the lymphatic system, which is stimulated by this combination into a healthy activity. Dr. Hamilton prescribes one part of the tincture of digitalis with two parts of nitrous æther; of which mixture thirty drops are to be given every hour, until a copious secretion of urine is produced. This evacuation being once excited to a considerable amount, he then keeps up an action both on the kidneys and bowels, by administering such doses of emetic tartar as may be borne without sickness, every six hours. After continuing this treatment for three weeks, he then recommends the tonic remedies, such as steel, aloetic and stomachic bitters, &c. If vertigo

or syncope should occur during the use of digitalis, Dr. Hamilton states that it is effectually relieved by the use of the warm bath.

This treatment having been some time continued, the general health will be improved; good blood will be freely propelled into every part of the system, the uterus will be adequately supplied with this fluid, and menstruation will most probably occur. This consequence does not, however, always succeed to a restoration of the general health: in this stage, therefore, half a drachm of madder, taken three times a day, is said by some to be beneficial; or a drachm of the tincture of black hellebore, three times a day, as recommended by Dr. Mead. In this state, also, are to be used those remedies which topically stimulate the uterus, such as electricity, or a husband.* If menstruation does not take place when the function of the digestive organs is natural, and the general health improved, I would try electricity. You generally find, that although the patient does not menstruate, she experiences pains in the loins, headach, shooting pains in the breasts, &c. at the customary intervals of menstruation: profiting by an opportunity of this kind, we must pass slight electric shocks through the pelvis; this has succeeded on the second day of its use; and the female has felt the blood issuing from the pudenda even before she had time to quit the room. As to matrimony, where so agreeable an expedient can be resorted to, it is a very effectual remedy.

* Among other local excitements, the employment of stimulating pessaries was an occasional practice in former times: more recently, stimulating injections have been recommended with a similar view.

When a woman, in whom the menstrual evacuation has been scanty and irregular, is married, this discharge will in general become profuse, unless it is altogether interrupted by pregnancy. The too early excitement of the sexual organs by Onanism, will produce a state of the system resembling that of chlorosis.

(b.) Amenorrhœa, or Suppression of the Menses.

A woman may have passed over that period of life when chlorosis is likely to occur, and menstruation may have been established very regularly for months or years, when from certain causes its return at the usual period may be prevented, or the discharge may be suddenly checked when it has actually taken place. An interruption of either kind may in general be attributed either to mental emotion, or to the application of cold.

We are continually witnessing effects of these causes on the functions of the sexual organs. Sudden terror, or any other passion, will not only check the secretion of milk, but will alter its quality; for if a child sucks under such circumstances, it will be griped. It is an ascertained fact among the ass-breeders, that if the foal dies and another is invested in its skin, and introduced to the mother as her own progeny, the milk will be freely secreted so long as the deception continues; but on her discovering the cheat, the secretion of milk immediately ceases.—This proves that mental agitation has a powerful influence over the function of one part of the sexual system, and it will also affect not less powerfully the

function of the uterus. I was prescribing for a French lady labouring under a suppression of the menses, and on questioning her, found that she had not menstruated since the Cossacks entered Paris; and it was a well authenticated circumstance, that at the time the allied armies entered Paris, from a similar mental emotion, a great number of French ladies were thus affected. The French journals of the day contained long lists of patients labouring under this disease. The effect of cold on the uterus during menstruation, or about the time of its occurrence, is a matter of familiar experience; and it is to this influence that the suppression of the menses is, perhaps, the most frequently to be imputed.

How do these causes operate? On some occasions they seem to excite an inflammatory action in the uterus, and they act on others by producing spasm; differences dependent upon the idiosyncracies of different individuals. If a young unmarried woman of full habit, with a red face, fleshy, and robust, be exposed to these causes, the consequent cessation of the discharge is followed by pains in the head and back, a sense of weight, pain, and tension about the region of the uterus, which is also tender on pressure, together with a hot skin, and rapid pulse. Here the attack seems to be of an inflammatory nature. But when females of a delicate habit, having an irritable nervous system, are subjected to a similar influence, the consequences are, irritation and spasm of the uterus, rather than inflammatory disease; for the pain is not continued, the uterus is not tender on pressure, the pulse is neither rapid nor full, and the skin is not

hot; on the contrary, there is a general sense of chilliness, and the feet are particularly cold.

If proper remedies are employed, the disease will in general be cured; but this success is by no means invariable. A young female, fleshy and full of blood, got very wet during menstruation; the discharge was suppressed, to which succeeded headach, a hot skin, and rapid pulse, pain and tenderness in the region of the uterus, &c.: physicians were consulted, but she died, and on examination the uterus was found in a state of mortification, the result of intense inflammation.

The treatment of this disease must be adapted to the variety of it under which a patient suffers. If of the inflammatory kind, which would be denoted by the presence of febrile symptoms, together with continued pain and tenderness in the region of the uterus, it must be treated by such bleedings, both general, and local, as by leeches, as the violence of the symptoms may demand, and by all those other means comprised in the antiphlogistic plan. By such treatment the inflammatory action will most probably be subdued; and on its subsidence, the menstrual discharge will be renewed, and proceed in the customary manner.

But supposing a suppression of this kind occurs in one of the other class of females; here we shall obtain more benefit from that which is termed the antispasmodic, than from the antiphlogistic plan; but in this case it is proper to purge, and that smartly. Put the patient into the warm hip bath, administer diluent drinks, and give antispasmodics, such as five grains of pulv. ipecac. comp. and three grains of camphor, every four hours, until all the symptoms subside. The injection

of antispasmodic remedies, such as laudanum, or assafœtida, into the rectum, will sometimes act like a charm,—in the latter I have great faith: let two drachms of assafœtida be rubbed down with the yolk of an egg, and mixed with six ounces of warm water; this mixture should be gradually injected up the rectum, which being done, a napkin should be closely applied to the part, and every means made use of in order to secure its retention. If you use laudanum, let the vehicle be small in quantity; an injection of this kind may consist of fifty or sixty drops of laudanum in three ounces of water. It is a great error to suppose the benefit is to be in proportion to the quantity of fluid injected: this may be true to some extent of purging injections, but the quantity of those of the anodyne description should be small, both because the active ingredient is less diluted, and the injection is the more likely to be retained. The spasmodic affection having yielded, and the nervous irritation being allayed, menstruation generally ensues. But it may so happen, that when the state of spasm has ceased in one variety of the disease, and that of inflammation in the other, the menstrual discharge may still not supervene. Its recurrence may then be expected at the next period; but if it should be suspended month after month, and year after year, this state is distinguished as that of obstructed menstruation.

(c.) Obstructed Menstruation.

By this expression is meant a chronic suppression of the menses, produced, perhaps, originally by one or other of the causes before mentioned, and continued

from some peculiar derangement of the system, the pathology of which is too obscure to be easily understood.

In this country, practitioners regard obstructed menstruation as the consequence of constitutional disturbance; while the patients themselves, instructed by the elder authorities among their own sex, entertain a contrary belief. The females who suffer chronic obstruction of the menses are of two classes: in one there is a preternatural fulness of vessels, with headach, pain in the back and loins, a full, strong, and rapid pulse, together, perhaps, with symptoms of incipient pulmonary disease, as flushed cheeks, pain in the chest, a short dry cough, &c.; in the other, agreeably with the difference of temperament, there may be remarked only disorder of the digestive organs, great nervous irritation, a small quick pulse, cold feet, and a sallow countenance.

When a woman menstruates regularly and naturally, the system obtains the relief of an adequate periodical excretion; but if the uterus, from deficient vigour, does not perform its natural function of secretion, there will be a plethora, of which the symptoms just mentioned are the consequence; hence benefit is obtained from those remedies which lessen the quantity of the circulating fluids.

If the state of obstructed menstruation continues long, the patient will suffer from disorder of the digestive organs, with torpor of the whole system, more especially of the sexual organs; her appearance will be leucophlegmatic, and her condition will resemble that of chlorosis.

The remedies employed for the cure of this disease

must be appropriate to the constitutions of those in whom it occurs. If it arises from excess of blood, we must lessen it by a spare diet, saline laxatives which operate three or four times a day; and congestion about the head or lungs must be relieved by the occasional abstraction of blood. Under this plan of treatment the symptoms will commonly subside, and menstruation will occur.

But if the patient is of the weak and nervous temperament, the treatment will be similar to that directed for the cure of chlorosis. The bowels should be regularly evacuated by aperients; and the system should be invigorated by tonics, by nutritive diet, regular exercise, and pure air. The constitution being restored to a more healthy state, the uterus will generally resume its function; but if it does not, you must now have recourse to those local stimulants for exciting the action of the uterus formerly recommended for the cure of chlorosis. But let this always be remembered, that the state of mere obstructed menstruation is to be carefully distinguished from that of pregnancy.

(d.) Dysmenorrhœa, or Painful Menstruation.

Women sometimes suffer, at the time of menstruation, pains in the back and uterus, shooting pains in the breasts, with sense of fulness and tightness in the head: these symptoms precede the discharge, and continue during the first few hours after its occurrence; but may diminish as the discharge proceeds, and before it has terminated cease entirely. These symptoms are not uncommon in those who menstruate

favourably; but they are designated by the term *dysmenorrhœa* only when they are of unusual severity, when the pain is extremely violent both in the loins and above the symphisis pubis, accompanied with excessive tightness about the head, and with weakness of the knees. These symptoms precede the discharge a few hours; abate, and finally cease, as it flows more freely. In these cases flakes, or little masses, which, when washed, are found to be coagulable lymph, are mixed with the discharge; and sometimes this substance is thrown off apparently as a membrane which had lined the cavity of the uterus.

In this complaint the discharge is in general scanty; but it may be deficient at first, and after continuing for a time may become so profuse as to occasion considerable debility. Women labouring under this disease are barren. We look around, and see many young married women whose appearance affords the promise of fecundity, who, nevertheless, have no children. This failure is a source of wonder and regret with those whom it chiefly concerns; and on enquiry it would be found to be generally, though by no means invariably, owing to the disordered actions incident to dysmenorrhœa.

The causes of this disease are three: the first and most common is a feeble, nervous, and irritable constitution; the second may be plethora, characterised by a red face, full strong pulse, &c.; the third is a disordered state of the digestive organs, or disease of the abdominal viscera. The pain will vary in different subjects: in some it may be of the inflammatory kind, accompanied with a hot and dry skin, rapid full pulse, headach, and tenderness of the uterus; in others, with

perhaps an equal degree of pain, though not of the same kind, — there will be cold feet, but neither a full pulse, nor tenderness of the uterus.

In the treatment of this disease there are principally two indications: the first, to alleviate the pain during the menstrual period; and the second, to employ between the intervals of menstruation such remedies as will prevent its recurrence. The first intention is easily accomplished; but the second, if at all, with great difficulty. If the uterus is tender on pressure, with a hot skin, rapid pulse, &c., the existence of an inflammatory state of the uterus is denoted. In this case the hip bath must be used, abstinence from animal food and fermented liquors must be directed, together with a vegetable diet, diluents and purgative medicines; and blood must be abstracted, if the inflammatory state is such as to require it. By these means the pain will be diminished, and the uterus will be disposed to a more healthy action.

In females of a weak, nervous constitution, gentle laxatives, together with anodynes, may be given with advantage on the first occurrence of the symptoms: the use of the hip bath may also be extremely beneficial.

In order to prevent the recurrence of dysmenorrhœa, if the abdominal viscera are disordered, you must endeavour, by a treatment upon general principles, to restore them to a healthy state. If plethora be the cause, you must reduce the quantity of the circulating fluid by vegetable diet, saline laxatives, and by the abstraction of blood about once a month. If there is debility, you must strengthen the system by the metallic tonics, as by steel, and sulphuric acid

combined with the sulphate of zinc; by pure air and gentle exercise;—these are the principal indications of treatment.

There are some practitioners who regard this disease as one always of an inflammatory nature, and in this view their treatment is little better than empirical. It consists, they say, of chronic inflammation of the uterus; and knowing the power of mercury in curing chronic inflammation of the liver, the eye, and other organs, they immediately put the system under its influence, by giving a grain of calomel with opium or the extract of hemlock every night until the gums become a little tender. Others, assuming, also, that the disease is always inflammatory (for the reasons that the pain is permanent, that there is a sense of fulness and tenderness in the region of the uterus, and that flakes of coagulable lymph are mixed with the discharge), prescribe indiscriminately that course of treatment which is termed antiphlogistic, consisting of bleedings, abstinence from animal food and fermented liquors, together with a vegetable diet, purgatives, &c. This treatment is proper only in that form of the disease which is dependent on plethora, the instances of which are by far the most rare. Dr. Dewees commenced with the antiphlogistic plan; by which, he said, he relieved many, but cured none. From considering that the structure of the uterus was chiefly muscular, he was induced to believe dysmenorrhœa analogous in its nature to chronic rheumatism. Agreeably with this view of its pathology, on the commencement of the pain he gave ten grains of camphor, and repeated this dose in two hours if the pain was not diminished; in this treatment he persevered, until menstruation

proceeded without pain. In the interval between the menstrual periods he gave a drachm of the volatile tincture of guaiacum three times a day in a glass of white wine, from which treatment considerable benefit is experienced in chronic rheumatism; he then gradually increased the dose till three drachms of this tincture were taken three times a day for perhaps three months. Of the good effects of camphor I can myself speak with confidence. It seems to act specifically on the uterus, affording considerable relief; but it should not be given when the disease is of the inflammatory kind, in which it may be prejudicial. Dr. Dewees considers the volatile tincture of guaiacum no less a specific for dysmenorrhœa, than for the cure of obstructed menstruation. When obstructed menstruation occurs in a female of a plethoric habit, florid complexion, full pulse, &c., this remedy, being too great a stimulus, is objectionable; but when the system is torpid and inactive, as is common in chlorosis and in chronic obstruction of the menses, it is not only unobjectionable, but may be used with great advantage; though I cannot as yet regard it as a specific.

(e.) Menorrhagia, or Profuse Menstruation.

The menstrual discharge, instead of being interrupted, may be increased to such an excess, that the loss of so much fluid may produce extreme debility, and prove highly injurious to the constitution. This irregularity is termed menorrhagia: but writers make a distinction; dividing it into profuse menstruation, and menorrhagia; meaning by the first an increase of

the customary discharge, and by the second, a hæmorrhage similar to that which may occur from any other part of the system. If the recurrence of the discharge is at the usual periods, the disease is merely excess of menstruation; if more frequently, menorrhagia. The distinction, however, between merely an excess of the uterine function, and actual hæmorrhage, is not in all cases easily made.

If this disease has existed a considerable time, the body suffers from the drain on the sanguineous system. For want of the usual supply of blood, the face becomes bleached, the patient has nervous headachs, the pain of which is confined to one spot, vertigo, singing in the ears, drowsiness; the body is chilly, the hands and feet cold, the heart acts feebly on small quantities only of blood at each systole, and the pulse consequently is small and languid. This disordered state of the brain is owing to a deficiency of the natural supply of blood, and is very similar to that which arises from too great a supply of this fluid. A person threatened with apoplexy has headach, vertigo, noise in the ears, &c., the cause of which symptoms is an excess of blood. The same sensations may be felt by a woman who has only half the usual quantity of blood sent to the brain: she feels as if she were always in danger of falling; this sensation occurs even on suddenly turning her head; and if it were not immediately and cautiously returned to its natural position, it is probable she really would fall; thus experiencing from deficiency of blood, the sensations which otherwise occur when an excess of this fluid is sent to the brain.

There are two classes of females peculiarly disposed

to menorrhagia. In the robust and plethoric, the disease is characterised by inflammatory symptoms, as permanent pain, sense of fulness, weight, and tenderness in the region of the uterus, together with a hot skin, and a full, hard, febrile pulse. These are the symptoms of an active or acute disease, which, on the Continent, is called inflammatory menorrhagia. In the other class of females, the disease is attended with no pain in the region of the uterus; there is a bleached countenance, a languid circulation, and a small weak pulse: this is the chronic form of menorrhagia, or, as distinguished on the Continent, menorrhagia, from debility. Among those who suffer the acute form of menorrhagia, the symptoms are sometimes those of inflammation, and sometimes those of spasmodic affection. Continental physicians, therefore, make spasmodic menorrhagia, or menorrhagia arising from irritation, a third variety of this complaint. The pain in this latter form is not constant, the discharge is not continued; it subsides, and returns with throes resembling labour pains; and is accompanied with a quick, contracted, and irritable pulse, which is that neither of inflammation nor of debility.

Thus we have three kinds of menorrhagia: the first is characterised by inflammatory symptoms; the second by general debility, and probably a relaxed and passive state of the vessels of the uterus; and the third by spasm and irritation. These differences must be borne in mind, for we are constantly liable to meet with them in our practice. Thus, a woman may menstruate at the regular periods, and the discharge may continue the usual time, yet it may flow with such rapidity that its amount may be more than double

that which is customary. Or the discharge may occur at regular periods, and instead of continuing three or or four days, as is natural, it may continue ten, twelve, or fourteen days; and as in the former case, debility is produced by the rapidity of the discharge, in this, the same state is induced by its long continuance. Or, instead of being regular in its periods, it may recur as often as every two or three weeks; and thus also the body is drained of its blood, and the system is debilitated.

If the disease be of the active and inflammatory kind, we must keep the patient in a recumbent posture on a sofa or mattress, prescribe a low, unirritating diet, together with such saline purgatives as will procure three or four evacuations daily. If there is a full, hard pulse, with a plethoric state of the system, treat it as you would a case of inflammation of any other organ, by copious venesection, and give such medicines as are likely to lower the circulation, as ten grains of the nitrate of potash with ten drops of the tincture of digitalis every six hours. Thus, by a recumbent posture, an unstimulating diet, saline laxatives, bleeding, nitre, and digitalis, the inflammatory symptoms will be subdued, the hot skin will become cool, the pain and tenderness of the uterus will subside, and, as the system becomes tranquillised, the hæmorrhage will cease. But this antiphlogistic treatment will not succeed in the spasmodic or irritative form of the complaint. It is difficult at the bedside always to distinguish these two forms; and if, on trial of the antiphlogistic means, no abatement of the symptoms takes place, we must have recourse to the antispasmodic remedies, which, after the failure of

the former, will generally effect a cure. A lady labouring under this disease, which was thought to be of the acute kind, went through the whole routine of antiphlogistic remedies without any benefit. I then gave her one grain of ipecacuanha every hour: in eight hours she became nauseated and sick, and the discharge immediately ceased. I had only to keep up this state of nausea for a day or two, and the discharge did not recur. When you have a case of menorrhagia, attended with a quick and irritable pulse, the pain subsiding and recurring, you may be certain that it arises from spasm or irritation, and that it will be relieved by antispasmodic remedies. The two best are, ipecacuanha taken into the stomach, and assafœtida with opium injected into the rectum. A grain of ipecacuanha is to be given every hour till nausea is produced; which state must be maintained for a day or two, by repeating the same dose as frequently as may suffice for this purpose; and quiet local irritation in the uterus by injections of assafœtida or opium, as directed in dysmenorrhœa. There is a very marked connection between the pain and the discharge; for if you can relieve the one, the other will cease.

The acute and the spasmodic forms of this disease are much more rare than that characterised by debility; in nine cases of menorrhagia out of ten there is a feeble circulation, produced, probably, by the loss of blood, general debility, a relaxed state of the vessels of the uterus, a chilly state of the body, cold hands and feet, great irritability of the constitution, with a disordered state of the stomach and bowels. Between the nervous system and the digestive organs there is

this sort of connection, that when either is disturbed, the other participates in the derangement. The selection of a proper mode of treatment in this form of menorrhagia is of the utmost importance. Many practitioners will tell you to administer such remedies as will strengthen and invigorate the system — take care of that, and let the discharge take care of itself. I do not consider this the best mode of treatment, but should rather say, take care of the discharge, and let the system take care of itself, which it will do; for, as you succeed in diminishing the discharge, the system will obtain a healthy proportion of its fluids, and the patient will gain all the advantages of an adequate nutrition. But on the contrary plan, while you are attempting to strengthen the constitution, the discharge will certainly be weakening it. A lady who went to India, was married there, and had seventeen children, with several miscarriages in addition. This rapid child-bearing produced a purely passive hæmorrhage. She had a continual dropping for months from the uterus, which occasioned a cadaverous countenance, a cold, death-like state of the hands and feet, a small weak pulse, and a nervous affection of the head. She had taken all kinds of tonics, steel, bark, acids; she had tried country air, and the cold bath; but all without success. When I first saw her she was lying on a sofa, a striking spectacle, more like a corpse than a living person: she said she was not glad to see me, for she had taken so much medicine with no effect, that she was perfectly tired of it. I directed her to have injected every night half a pint of water into the rectum after she was in bed. She said she did not like it; I replied, "You will go on as you have done for

weeks, and at length you will have recourse to my slighted remedy; you will then find its operation so speedy and so effectual, that you will exclaim, 'What a fool I was that I did not use it before!'" This representation had the desired effect: she began to use this simple injection the same night. At first, the chill was just taken off the water; gradually its temperature was reduced until it was used quite cold; and being herself satisfied of its efficacy, this injection was repeated every night and morning. She lay on a sofa during the day, and in nine or ten days the discharge ceased, which had resisted all other remedies during nine months. The drain from the system having ceased, the vessels became filled, and she regained her flesh and strength.

In using this remedy, I would advise you to act with caution when the weather is very cold. At first take the chill off the water, and, by degrees, use it cold; but do not use it in the inflammatory or acute form of the complaint, or in that of the spasmodic and irritable kind, for in these it will be productive of mischief. If you use it in the description of cases to which I have alluded, I do not know so good a remedy; but do not suppose that it will therefore cure others which are not of the same nature. In the passive menorrhagia, let your patient have pure air, together with the injections of cold water, and nutritive, but not stimulating diet; let her take acids, bark, and steel, and keep the bowels relaxed. On the Continent they use cinnamon as a tonic, and I have found it a good addition to the medicines of this kind which I usually prescribe. My common formula is a draught consisting of acid. sulph. dilut. gtt. xv., zinc. sulph. gr. j., tinct. cinnam. gtt. xxx.,

aq. menth. pip. ʒi; which is to be taken three times a day. Steel is sometimes useful, but on other occasions it quickens the pulse; the benefit, therefore, to be derived from this remedy can be known only by a trial of it. It has been recommended in this complaint to inject, with a syringe, introduced into the mouth of the uterus, a decoction of pomegranate rind with alum: this treatment has been attended with success, but it should be employed with the greatest caution. This remedy was once tried under the direction of an eminent and skilful physician; inflammation of the uterus came on in consequence, and the patient died.

General directions for the treatment of menorrhagia may be thus stated:—Let the diet be nutritious but not stimulating; keep the bowels relieved by the use of gentle laxatives; give tonic medicines; employ local means, of which the injection of cold water into the rectum is the most efficacious. In administering an enema, it must not be propelled with great violence, for the gut does not like to be thus assaulted, and will immediately reject it. Our object is that the injection should be retained; therefore it must be given when the patient is in bed. It must be pressed up gradually and gently, at first every night, and then every night and morning. The patient must remain on a sofa during the day, as the recumbent position is the most favourable. If it should be necessary to continue this remedy a long time, we must suspend the employment of it for a few days at the accustomed return of the menstrual period, and afterwards resume it. The benefit obtained from it is sometimes immediate; but if the case should prove tedious, the

disease will nevertheless, in general, be ultimately cured by it.

The profuse discharge so especially characteristic of menorrhagia may be in connection with other states than those formerly described: it may proceed from cancer of the uterus, from polypus, or from threatened abortion. It is not at all times easy, from a mere description of symptoms, to distinguish between those hæmorrhages which arise from an altered structure of the uterus, and those incident to the common form of menorrhagia; the nature of the case may, however, be discriminated by an examination per vaginam. Cancer of the uterus is more common than is generally supposed; and hæmorrhages resulting from this disease are often treated as those of common menorrhagia when, perhaps, on the approach of a fatal termination an examination is made, and a large fungus, or else cancer, is discovered. Many women are pregnant, and do not know it; a hæmorrhage takes place, and continues until the expulsion of the ovum is effected, when the hæmorrhage ceases. In the earliest part of my practice, I was called to a lady who had for a considerable time a dropping from the uterus, which had produced a bleached cadaverous countenance, cold hands and feet, and great debility. On examination, I found at the upper part of the vagina a little long projecting tumour, which I thought might possibly be a peculiar formation of the cervix uteri. I was afterwards called in great haste to see her; and on my entering the bed-room she said there was something coming away; and on examination I found the leg of a fœtus in the vagina: I speedily delivered her of a fœtus of about four months' growth; the pla-

centa soon followed, and the hæmorrhage ceased. This was a blunder of mine; for that which I supposed to be the cervix uteri was no other than the foot of the fœtus just beginning to protrude through the os tincæ. A professional gentleman called on me one day, and said that his wife was in great pain, and was flooding profusely. I enquired if the discharge coagulated, and whether the pain resembled that of labour? On his replying in the affirmative to these questions, I said the case must be one of abortion, which the husband thought impossible, as his wife was not pregnant. I enquired whether menstruation occurred at the last period? The answer was "No; but that is no guide, for she has not menstruated regularly for the last twelve months."—"Well; if she has pains like those of labour, attended with a discharge of coagula, I have little doubt but she is miscarrying." The gentleman was rather irritated at this opinion. I accompanied him, however, to his house, and on entering the bed-room was shown a close-stool pan nearly full of coagulated blood: I plunged my hand to the bottom of the vessel; and after a short search, fished up a little fœtus about the size of my fore-finger. Always, therefore, bear it in your mind, that menorrhagia may be the consequence either of commencing abortion, of polypus uteri, or of a cancerous state of the uterus.

(f.) Leucorrhœa, or Fluor Albus.

Women are very liable to a puriform discharge from the vagina, which varies in colour in different cases, being sometimes green, yellow, or white; most

frequently of the latter appearance: therefore the disease is vulgarly termed *the whites*. Sometimes it is merely a local complaint of no great consequence, unattended with pain, or with any constitutional derangement: but at other times it is complicated, with much constitutional disturbance; such as disorder of the stomach and bowels, lowness of spirits, and general debility; there is a pale, leucophlegmatic countenance, with a dark circle around the eyes.

We know very little more of the source of the discharge than that it flows from the external orifice of the vagina; but whether it is secreted by the membrane lining that canal, or by that lining the cavity of the uterus, it is difficult to determine. It often occurs during pregnancy: it must then flow from the membrane lining the vagina, as the os uteri is at that time hermetically sealed. Women have died when labouring under this disease, and the inside of the uterus has been found covered with this secretion; in such instances it must have proceeded from those vessels which pour out the menstrual fluid. We are well aware of the sympathy which subsists between the uterus and the constitution generally; but the connection is less intimate between the vagina and the constitution; therefore, in the severer forms of the disease, which are attended by constitutional derangement, we suppose the discharge to proceed from the uterus; and from the vagina, in those more trifling ones, in which the general health does not appear to suffer.

In speaking of some other forms of uterine derangement, I said that it was difficult to ascertain whether they arose from a disordered state of the

constitution, or whether the constitution was secondarily affected by the disordered function of the uterus. Persons who would not permit their hearers to suppose them ignorant of the nature of any disease, affirm confidently that leucorrhœa arises from a disordered state of the general health; but if they would be candid enough to state the truth, they would confess themselves unequal to a discrimination of the order of the derangement in all cases. In some instances the disease certainly does commence in the uterus: a woman has procidentia uteri; after the reduction of which a pessary is introduced, it occasions irritation, and leucorrhœa follows. Here the disease must originate from the irritation of the uterus; but it is difficult to determine which is the cause, when both the uterus and the general health become disordered about the same time. There is, however, much reason to believe that the uterus is first affected; since leucorrhœa often succeeds frequent abortions, difficult labours, and excess of venery.

In leucorrhœa there is, accompanying the discharge, general debility, with considerable disorder of the digestive organs. Which of these symptoms claims our first attention? The treatment should, from the commencement, be appropriate to them all. The derangement of the digestive organs will require the use of such gentle laxatives as will produce two evacuations daily; these may be given in conjunction with tonics, such as bark, steel, acids, together with the use of the cold bath; at the same time the diet should be light, nutritious, and suited to the digestive powers. Some persons begin with a drastic purge; and others with an emetic, and after that an aperient;

and depend, for diminishing the unhealthy secretion, upon a long list of astringents: green tea, which can always be procured readily, and excites no suspicion, is perhaps as efficacious as any of them. Half a drachm of the sulphate of zinc, dissolved in six ounces of rose water, forms a good injection, some of which may be thrown up the vagina with a syringe twice or three times a day. But it is to be remembered that the best lotion will lose its effect in a week; have then half a dozen; and when one fails, use another for a week, until you have tried them all, and then employ them again. The treatment of leucorrhœa is to a great extent empirical. Cold astringents, among the rational practitioners, are in the most general use; but tepid ones are often equally beneficial. Practitioners have exhausted all the cold astringent remedies, and then, having recourse to tepid ones, the patient has been cured immediately. The liquor plumbi subacet. dilut. is now used at the Middlesex Hospital, tepid, and with general success. The strength of this application is to be gradually increased until it is doubled. It is in this complaint as in ophthalmia, that you cannot tell *à priori* whether cold or tepid applications will be the most successful; if therefore one fails, the other should be tried. The sexual, are intimately connected with the urinary organs, which appears to have suggested for the cure of leucorrhœa such remedies as the turpentines and the tincture of cantharides: the latter may be given in doses of ten drops three times a day, increased two drops at each dose up to twenty, or even thirty drops, or until slight symptoms of strangury are produced; when the dose is to be reduced to such as

may be borne without this effect. Many cases of the most obstinate leucorrhœa have been cured by this remedy. The balsam. copaibæ, from the celerity with which it cures gonorrhœa, after the inflammatory stage has subsided, has been suggested, by analogy, for the cure of leucorrhœa, and has frequently been prescribed with success. The best form of its exhibition is on sugar, to the amount of half a drachm, together with a little of the tincture of lavender. Leucorrhœa is very common in married women, scarcely one in ten of those residing in London being entirely exempt from it; but in girls it is comparatively rare. Dr. William Hunter states that in Italy it is imputed to insufficient clothing: he was therefore in the habit of directing females, suffering under this complaint, to wear good substantial flannel breeches.

(g.) Final Cessation of the Menses.

At about the age of forty-five women expect the menses to cease, and they call this period *the dodging time*. This evacuation does not cease suddenly, but becomes irregular; at first not returning for two or three months, then profusely, and not appearing again for perhaps a still longer period; it may then recur, and continue profusely for a week or two, and then its return may be so frequent as once in a fortnight. At length the intervals of its recurrence are still more distant, until about the age of forty-eight or fifty, when it ceases entirely. Women are very anxious about this period, which they term emphatically *the turn of life;* and they have reason for their anxiety. At this time, disease of structure is the most likely to occur, such

as cancer of the uterus or breast; and the health is in general more or less disordered.

During the menstrual period, the constitution had to form sufficient blood for its own support, as well as a superfluous quantity of this fluid for the purposes of menstruation: if on the final cessation of the menses no more blood is formed than is necessary for the support of the constitution, this period will be passed over with very little disturbance; but if blood is formed in the same quantity at this period, as previously, there will be a superfluity of this fluid for which there is no outlet, and there will occur congestion about the head, with other symptoms of plethora. For the relief of these symptoms it may be necessary to take blood from the arm: but the same purpose may be accomplished generally by directing a low diet, abstinence from fermented liquors, &c., such aperients as will keep the bowels gently relaxed, together with regular exercise. Of the diseases of structure connected with this period we shall speak hereafter.

(h.) Pruritus Pudendi.

On separating the labia pudendi, a deep groove or slit is seen, which is called the vulva. It is lined with a mucous membrane, which is sometimes the seat of incessant itching. This irritation is so intolerable, that the female can seldom desist from rubbing or even scratching violently the part affected. A female troubled with this disease cannot go into company, but shuts herself up in her bed room: it has been so severe, as to have occasioned suicide.

Take care that you make no mistake between this, and an herpetic disease, and that you distinguish between the itching of pruritus pudendi and that occasioned by vermin called morpiones, or crab-lice. Before you prescribe, you had better ascertain the true cause of the symptom, by getting some female to examine the parts; and if there are neither herpetic eruptions, nor morpiones, it is a case of pruritus pudendi. Pruritus often arises from irritation in some other part, as in the rectum, the uterus, or the bladder. If the patient has ascarides moving about in the rectum, they often excite dreadful itching in the vulva. An effectual remedy for this complaint is an injection, thrown up the rectum every night, consisting of two scruples of aloes rubbed up with half a pint of lime water; this, in conjunction with calomel purgatives, will clear the rectum of the ascarides, and cure the pruritus. Pruritus may also be occasioned by the presence of an ovum in the uterus. Pregnant women are very liable to it, and it will sometimes continue till the end of pregnancy. Dr. Wm. Hunter relates a case in which a woman in labour suffered more from the excessive itching occasioned by this complaint, than from the labour-pains. Here it seems to proceed from local nervous irritation, together with increased vascular action; for if the parts be inspected, they appear preternaturally red. To relieve this turgescence of the vessels, apply eight or ten leeches as near the seat of the affection as possible, and use lotions either cold or warm as may be found on trial the most advantageous. Dip a large sponge in warm or cold water, and shower down its contents frequently over the parts affected; keep the bowels in a

lax state with *oily, not saline* purgatives. Recommend abstinence from all spicy diet and fermented liquors. Pruritus pudendi may also be dependent on an irritable state of the bladder, or on calculi producing irritation, which latter, however, in females are of rare occurrence.

If we find that this disease does not arise from any of the above causes, the expedient recommended by Dr. Wm. Hunter may be tried, which consists in the introduction of the female catheter into the urethra, which is said to afford considerable relief. Dr. Cullen sent a patient labouring under this complaint to Dr. Hunter, requesting him to introduce a catheter, and to allow it to remain in some days; which cured her. The disease returned, and the same remedy was again equally successful. He tried it afterwards on other patients, and found it succeed; therefore, if other measures fail, introduce the catheter into the bladder, and keep it there two hours in the twenty-four, for some days. Should this plan not succeed, you must diminish the sensibility of the parts; and if that fails, increase it, which will produce a new action, by which, if continued for some time, the morbid irritability of the parts will be superseded: should, however, these means prove ineffectual, you must have recourse to counter-irritation. To diminish the sensibility of the parts, use narcotics; such as infusion of tobacco unguent. cicutæ. made by mixing the juice of the plant with lard; or use an ointment with opium in it, to be applied liberally, so as to keep the part affected constantly under its influence. As a stimulating application, the parts may be washed frequently with a lotion composed of two grains of the hydrarg.

oxy-mur. dissolved in an ounce of lime water: this is a good remedy. If the parts have been abraded by violent scratching or rubbing, these excoriations should be first healed. In the cases of two old women, who were afflicted with this disease, for the cure of which all other remedies had failed, an issue was made in the upper part of each thigh; these discharged copiously, and by this mode of counter-irritation the complaint was cured. The disease often resists every remedy which has been suggested. By some it is mistaken for furor uterinus; but in pruritus pudendi there is only a most intolerable itching, without any increase of venereal appetite.

(i.) Furor Uterinus.

In this disease women are troubled with an inordinate desire for venery. Country girls, being more chaste, are not so liable to this complaint as those living in town. In males the frequent excitement of the sexual organs by onanism disposes to nocturnal emissions of semen which produce a very irritable and debilitated state of the whole system. Women have no semen; yet during coition, there is an effusion of fluid from somewhere, and trifling causes will excite its ejection. The frequent emission of this fluid will occasion the same disordered and debilitated state of health in the female, as is produced by onanism and its consequences in the male. I was consulted by a lady, who had several children, who was labouring under great debility both of body and mind. She disclosed her secret to me, and said she had the most irresistible disposition to lasciviousness imaginable;

that when alone she could not desist from rubbing the parts until she became exhausted and bathed in perspiration; she slept well, but as soon as she was awake the same propensity recurred. Another lady who consulted me, said she had always been brought up virtuously, and had hitherto been well disposed; but now a man could not pass without her experiencing those sensations which were alone her husband's right. Here we must soothe the sexual irritation, and restore the general health, by bark, acids, light nutritive diet, and by cold bathing. Spices and fermented liquors must be totally prohibited. Camphor taken internally, and cold applications to the parts affected, are beneficial in this complaint. I prescribe camphor as follows:—A scruple of camphor to be rubbed up with mucilage in four ounces of water, and a third part to be given three times a day, gradually increasing the camphor until one drachm is taken daily. Apply cold water, or vinegar and water, to the perinæum, and throw into the rectum cold water injections as recommended in menorrhagia. Warm applications in some cases might be more soothing, and may be tried if the others fail. Send your patients into the country, or to the sea-side, where they may have the advantage of cold bathing.

(k.) Imperforate Hymen.

The orifice of the vagina is naturally, though not completely, closed by a membrane called the Hymen, which has an opening through it, varying in shape in different females; it is generally semilunar, and is situated at the upper and fore part of the membrane.

This membrane is ruptured at the first sexual connection, and contracts into two or three folds, named carunculæ myrtiformes. This membrane is sometimes quite imperforate. This is a congenital defect, and remains undiscovered by the patient, or by her mother, till the period of menstruation arrives. The girl then experiences the common symptoms of menstruation for two or three days, but no discharge appears; they again occur periodically. The menstrual fluid is prepared by the uterus, and several ounces being added each month to the former quantity, the vagina and uterus are thus by degrees completely filled. Inconvenience and pain from distention are now experienced, and there is a constant state of indisposition in place of the periodical one; the disorder is, however, increased at each succeeding monthly period. At length, by the accumulation of menstrual fluid, the uterus is greatly distended, the abdomen enlarged and tense; and the innocent girl, from her increase of size, together with the absence of menstruation, may be supposed to be pregnant. Dr. Mackenzie was consulted in the case of a young woman labouring under retention of urine: on making an examination per vaginam, he thought he discovered the membranes distended by the liquor amnii; and as the patient had full breasts and tumid abdomen, with pains going off and returning, he considered her in labour. After the lapse of a few hours, finding all the symptoms precisely the same, he examined more minutely, and perceiving that he could not pass his finger up by the side of the tumour, he discovered that there was an imperforate hymen, greatly distended by the accumulation of the menstrual fluid.

After a girl, having all the characters of her sex, has arrived at the age of puberty, if she experiences every month the usual symptoms of menstruation, while no discharge appears, it may be suspected to be a case of imperforate hymen. Under this suspicion, an examination should be made before medical treatment is directed, which, if the suspicion is well founded, must of course be useless.

Supposing an imperforate state of the hymen to be ascertained, you must divide the membrane by means of a lancet carried upwards and backwards, and then from side to side, making that which is termed a crucial incision, when the retained menstrual fluid will gush out sometimes to the amount of several quarts, resembling treacle in appearance, but not particularly offensive, although so long confined in the vagina and cavity of the uterus. The vagina and uterus must then be cleansed by means of a syringe and warm water. Relief being thus given, the previous symptoms usually subside; but should any treatment be required, you must proceed as may be indicated upon general principles. Peritoneal inflammation has been occasioned by the accumulation of the menstrual fluid, which, distending the uterus, has made its way through the Fallopian tubes.

Cases sometimes occur in which the aperture in the hymen is properly formed, but the surrounding membrane, being of a tough and ligamentous structure, will not yield to any efforts of sexual intercourse. In cases of this description the attention, of the patient is not likely to be directed to such circumstance until marriage takes place, when this state of things becomes the source of great distress both to the wife

and her husband, giving rise to much perplexity as to the nature of the impediment. If consulted on such an occasion, we must insist on obstetrical evidence. On making an examination per vaginam, you will immediately discover the resisting membrane. Having thus ascertained the impediment, you must proceed to remove it by dividing the thickened membrane in the manner before directed, and the re-union of the divided parts is to be prevented by plugs of lint.

(l.) Malformed Vagina.

The hymen may be perfectly natural, but the vagina behind it, though of its proper length, is sometimes so small, as scarcely to admit a goose quill. The consequences of this contraction are similar to those of the unyielding hymen. In this dilemma a medical man is consulted. Inflammation has perhaps been produced in the vagina, by the efforts to overcome the obstruction; there is a burning sensation in the vagina, accompanied with discharge, and the bride and her relatives think that the husband has communicated to her some disease. On examination, it is found that the contracted portion of the vagina will not admit the finger. The mode of cure is the same as in cases of stricture of the urethra; that is, the vagina must be dilated by means of bougies and sponge tents—the former are the best. Introduce a bougie previously oiled, which passes with some difficulty. Do this at bedtime, and the next morning enquire if it produces pain; if not, let it remain twenty-four hours, which I always wish it to do. If it occasions much pain, you must remove it, and in-

troduce a smaller one. At the end of twenty-four hours, withdraw the first bougie and pass up a second. of a larger size; and thus proceed until the vagina will admit a bougie as large as the penis. Before the bougies are introduced, you must reduce the inflammation which may have been previously excited. You must prescribe oleaginous purgatives, warm injections, low diet, and forbid the use of spices and fermented liquors.

The vagina may be sufficiently large, yet it may be unnaturally short. It is generally of such length, that you cannot feel the os tincæ, if you have a short finger; but it may be so deficient in this respect as to allow the introduction of the first joint only of your finger, and consequently it will admit no more than the glans penis. For this malformation there is no remedy, and the female who is the subject of it must be an unhappy companion for life. I once met with a case of this kind. Dr. Hunter was consulted by a lady in a mask, who had a short vagina. He told her she was the most unfortunate wife a man could have, there being no cure for her.

(m.) Lacerated Perinæum. Sloughing of the soft Parts, &c.

The perinæum is sometimes lacerated during labour. The head of the child descends first downwards and backwards; but when it has arrived at the hollow of the sacrum, it can go no further in this direction, as the termination of the sacrum is curved a little forwards and upwards, forming the os coc-

cygis; it is, therefore, thrown forwards. As soon as the head has passed the sacrum and coccyx, the pressure of the child is then thrown wholly upon the perinæum; and unless some assistance be rendered, this part, together with the sphincter ani, will very probably be lacerated, and the rectum and vagina be made into one canal. The woman then becomes incapable of retaining her fæces, which pass away involuntarily. The perinæum should be supported with the palm of the hand at the time when the head of the child is pressing on it, by which the superincumbent weight on the perinæum is diminished, and the head, instead of descending downwards and backwards, is made to descend downwards and forwards. I have met with this accident only once, and that not in a natural labour, but during the application of the forceps, when it is not an uncommon occurrence.

The forceps being properly applied, if the head is situated high up, we first pull downwards and backwards; and as soon as the perinæum is distended, we apply one hand to support it, and continue the extraction with a diminished force downwards and forwards. But by continuing to pull downwards and backwards, not giving at the same time sufficient support to the perinæum, laceration takes place. If the laceration is recent, and does not extend into the rectum, it readily closes. The parts are to be washed with warm milk and water three times a day; the patient should lie constantly on her side, and her knees are to be kept in close contact. In nine cases out of ten the laceration does not extend through the sphincter ani; this you can ascertain by passing your

finger from the vagina to the rectum in the course of the perinæum.*

If the sphincter ani be lacerated, and the rectum and vagina made into one canal, this state may continue for months, or even through life. On visiting a lady about three months before her confinement, I asked if her health was good: she said yes, except a chronic diarrhœa, which prevented her going into company; for as soon as she felt a disposition to evacuate the bowels, their contents came away. She had been attended by several physicians, none of whom had examined her, but prescribed hydrarg. cum cretâ, astringents, &c. I did not examine the parts until the period of actual labour; when I soon discovered a laceration of the perinæum and sphincter ani. I met with another female, who had been treated for chronic diarrhœa, labouring under a similar misfortune. I do not know why we may not operate here as for the hare-lip, by paring off the edges of the parts, and keeping them in contact, with a view to their union. I have now two patients using an instrument devised to palliate this malady, which they say is very effectual. They can now visit, or receive company: the instrument is a circular band of steel, which goes round the body just above the hips; from behind, a piece of steel, somewhat elastic, and so fixed as to admit of its being moved to either side, descends,

* To these directions it may be added, that a *diffused immethodical* support of the perinæum during delivery by the forceps is frequently ineffectual; this support should extend to that precise point of the perinæum at which the labia unite, where the strain is the most considerable, and from whence the laceration commences.

and incurvates forwards between the nates, and then turns a little upwards. At the end of this piece of steel is an ivory ball, on which is placed a sponge sufficiently large to cover the vulva, perinæum, and anus: when the patients evacuate the bowels, they have only to turn it on one side.

In some cases of very protracted labour, when the head of the child presses on all sides, inflammation and sloughing ensue; the labia, vagina, and surrounding soft parts, are destroyed to such an extent, that on the separation of the sloughs, an opening is left, communicating with the bladder in front, and the rectum behind. Thus the vagina becomes a receptacle and passage for both urine and fæces. As the bowels in health are seldom open more than once in twenty-four hours, the posterior part of the wound, being undisturbed for long intervals, will sometimes gradually contract, and at last close. But not so the communication with the bladder. The water is constantly dribbling away, and the aperture becomes fistulous. Mr. G. Young suggested to me a mode of treatment in cases of this kind, by the introduction into the vagina of an Indian rubber bottle with a piece of sponge sewed to it. This sponge should be placed opposite to the fistulous opening in the bladder. The urine absorbed by it may be occasionally pressed out with the finger: a fresh bottle should be introduced every morning, and the bladder should be emptied by the catheter several times every day. Mr. Barnes, of Exeter, had two* of these cases under

* More than two cases are alluded to in the paper of Mr. Barnes on this subject, read by Dr. Gooch to the Medical and Chirurgical Society. See Med. and Chirurg. Transactions, vol. vi. p. 583.

his care: he wrote to ask my advice, and I mentioned this plan to him, which he tried, drawing off the patient's urine three or four times a day with a catheter. In two months, on making an examination of the parts, he found the fistulous communication much smaller. He replaced the bottle in the same manner; and in a few months the opening was completely closed. It is not necessary that the surgeon should attend daily to draw off the patient's urine. Teach a patient or a nurse the anatomy of the parts, and let either of them introduce the catheter. This complaint is a most distressing one, and demands on the part of the medical practitioner the greatest attention, and the careful employment of any remedy which promises to be effectual.

(n.) Polypus Uteri.

Menorrhagia arises from functional derangement of the uterus. Hæmorrhage, or flooding, may, however, ensue from an alteration of the structure of the uterus; and it is an important rule, in obstinate and long standing cases of hæmorrhage from this organ, which have resisted the usual remedies, to examine the state of the parts per vaginam, by which alone the cause of the symptoms may be discovered, and an appropriate treatment adopted. Some profuse discharges from the uterus are the precursors of abortion; some arise from scirrhus producing various kinds of altered structure; others from polypi growing from the cavity of the uterus.

When a discharge suddenly comes on, attended with throes recurring every few minutes, I consider

it as the commencement of abortion. But when the discharge has continued for weeks, producing those affections of the brain which arise from too scanty a supply of blood, as nervous headach, singing in the ears, susceptible state of the mind, and connected with disorder of the digestive organs, a pasty, leucophlegmatic countenance, and lancinating pains deeply situated in the region of the uterus, I conclude that there is scirrhus, or cancer, in some or other modification. When the above-mentioned symptoms are unattended with lancinating or burning pains in the uterus, have resisted all remedies, and are accompanied with a sense of weight or burden in the part, I conjecture the case to be one of polypus uteri. If this conjecture is confirmed on examination, instead of finding an empty vagina, you discover in it a tumour varying in size in different cases; it may be that of a walnut, an apple, or a child's head. These tumours grow from different parts of the uterus—the fundus, the cervix, or from the edge of the os tincæ—when from the two last situations they are always easily detected, as they must immediately descend into the vagina; but when the tumour grows from the fundus uteri, and is of moderate size, it still remains in the cavity of the uterus, and you cannot, by an examination per vaginam, readily discover it. At length it grows larger, and the uterus, as in its gravid state, enlarges with it: it then excites the muscular fibres of the uterus; when it is suddenly expelled through the os tincæ into the vagina, where it is easily recognised. As the size of the tumour increases, it occasions much uneasiness; it presses forwards on the urethra, producing retention of urine, and backwards on the

rectum, occasioning a difficulty in passing the fæces. The patient feels a weight in the vagina, and a sensation as if something was about to come away. If it is neglected, and if the discharge does not kill the patient, the tumour at last presents itself between the labia externally. A case of this kind occurred; and on its being discovered, the tumour, which had a slender neck, was cut away with a pair of scissors. The patient was in so weak a state that the operator thought she would have died in a few hours. The hæmorrhage, however, ceased immediately, as it usually does as soon as the tumour is removed; her constitution rallied, and she did well. In these cases medicine is of no use. The injections of cold water into the rectum are, for a time, palliative. Tonics and nutritive diet may for a while support the strength; but the patient will decline and die, unless the tumour is discovered, and a cure accomplished by its removal. This may sometimes be effected with impunity by means of the knife or scissors; but this method may be followed by a fatal hæmorrhage. All practitioners now use the ligature, which is passed round the neck of the tumour, and drawn so firmly as to prevent the circulation through it; this ligature is tightened daily until the tumour drops off.

There is often much difficulty experienced in applying and tightening the ligature with the old instrument; this led me to think of the construction of another. It consists of two straight silver cannulæ, about eight inches in length; a strong ligature, as of whipcord, is to be passed through one of these cannulæ, and from this, through the other; the ends of the ligature will hang from those of the can-

nulæ, which are connected above by the passage of the ligature from one to the other. These cannulæ are to be placed close together, so as to form as it were only one instrument, and are then to be introduced in front of the tumour as high as the place where it is intended to tie it: the cannulæ are then to be separated; one of them is to be carried round the tumour in one direction, and the other in the opposite direction, when they again meet, and are to be kept close together. Thus the ligature is passed round the base of the tumour. It remains to fix these cannulæ,—and this is done by an instrument consisting of a small silver rod, having two rings at its upper extremity, just large enough to admit the two cannulæ, these rings are joined together at their sides; and two short cannulæ, forming one double cannula at its lower extremity, with rings at their sides, to which the ligature is to be fastened. The ligature being passed round the neck or base of the tumour, and the cannulæ being held close together, the rings of the instrument just described are to be passed over the cannulæ to their upper extremity, by which at this point the cannulæ will be held close together; the short cannulæ are in like manner to be passed over the lower extremities of the long cannulæ, which also will be kept by them close together. Thus the cannulæ are so fixed, both above and below, as to form only one instrument. The ends of the ligature are now to be drawn tight, and are then to be fastened to the little rings projecting from the sides of the short cannulæ.*

* For a plate of this instrument, see Dr. Gooch's work on some of the diseases incident to the puerperal state.

Having completed the operation of tying the neck of the polypus, and given the patient the necessary directions, it will be proper that you see her every day, when you have two important objects of attention: the first, to cleanse the vagina and uterus of the fetid discharge consequent on the death of the tumour; the second, to tighten the ligature every day until the tumour comes away. The tumour for the first twenty-four hours swells, but afterwards it becomes flaccid and discharges a fetid matter, which, if allowed to accumulate, might cause irritation, headach, and fever. This discharge you wash away by injections of tepid water, by means of an elastic catheter introduced into the uterus. The apparatus may be thus made:—Fix a cork, with a hole through it, on the pipe of a syringe; let the orifice in the cork, through which the catheter is to be inserted, be of such a size that the catheter may be firmly fixed into it: through this catheter you may inject into the uterus half a pint of tepid water, by which the discharge will be washed away, and any unpleasant symptoms prevented from its absorption. If the discharge is very profuse and very offensive, the injections of warm water should be used twice a day. The ligature generally cuts through the tumour in six or eight days, and the polypus comes away. Sometimes the tumour is so large, that the aid of the midwifery forceps is required for its extraction. The hæmorrhage, which has continued for many months or years, ceases on the removal of the tumour; the functions of the body are gradually restored; and the woman, who just before had a pallid countenance, soon has a rosy cheek. After the operation, attention to the

state of the bowels is necessary. In some cases tonics are required, of which acids are perhaps the best.

The hæmorrhage attendant on polypi of the uterus is constant, but is aggravated at the menstrual period. I have succeeded in curing many cases of this disease which had baffled the skill of eminent practitioners, who, not having ascertained its nature by an examination, had mistaken it for menorrhagia. A lady had been suffering from flooding during a year and a half. Her cheeks were like those of a corpse. She had headach, singing in the ears, and her body was much emaciated. The day before I saw her, she had taken a purgative which had produced retention of urine—the straining at stool had forced the tumour against the urethra. Many able men had attended her. I looked at their prescriptions, and perceived they had employed all the usual remedies for menorrhagia. As the discharge had continued so long, I suspected the existence of a polypus, and refused to prescribe without examining the state of the parts, when my suspicion was confirmed. The next day I applied the ligature, tightening it daily and cleansing the parts of the discharge: on the ninth day, the polypus came away; from that time she had no return of the hæmorrhage, and has since menstruated regularly. No medicines were administered, except *pro formâ*. I took care of the uterus, and left the constitution to take care of itself. She recovered with amazing rapidity.

The neck or stalk of the polypus is sometimes so small, that by slightly pulling it, the tumour comes away, and no hæmorrhage ensues. When a ligature is applied to the neck of a polypus, which is itself insensible, the only pain occasioned by it is a slight

sense of dragging; but if a portion of the uterus be included, the most violent pain will be produced. Dr. Denman once applied a ligature to a polypus uteri: he tightened it, and immediately the patient complained of pain; he relaxed the ligature, and again pulled it, and with the same effect. Being a cautious man, he loosened the ligature, and left it in the uterus; she died in a day or two. On examining the body, he found the polypus had grown from the fundus uteri, and by its weight had partly inverted the uterus, around which he had placed the ligature. Dr. Hunter in a case of this kind applied a ligature and drew it tight, violent pain was produced; he slackened it, the pain ceased; he pulled it again, and agonizing pain was occasioned; he told the patient she must bear it; he gave her an opiate, and thus left her. The next day he found her with a thready and almost imperceptible pulse, bathed in cold sweats, with a cadaverous Hippocratic countenance. She soon died; and he discovered, on examination, that he had included a portion of the uterus in the ligature.

Never tighten the ligature when it produces the pain which it would occasion on a part possessing sensibility; rather let the ligature be removed, and applied lower down, where the tightening of it is not productive of pain. It is not necessary to tie the polypus at the top of its neck; it is quite sufficient to tie it where it projects from the uterus into the vagina, supposing such to be the situation of it. The stalk will not grow again, but will gradually diminish and leave no vestige behind. All these cases are unaccompanied with diseased structure of the uterus. But there are some cases of fungus having a broad base and apparently

of a malignant nature, in which the uterus itself is diseased. In such cases the ligature is of no use, as the fungus, if removed, would grow again, and the fate of the patient would be accelerated by its employment. When the uterus itself is diseased, in addition to discharges from this organ, and disorder of the general health, there is most commonly more or less of pain, perhaps of a lancinating kind, and the region of the uterus is also tender on pressure. In such cases the treatment must be directed chiefly to the preservation or improvement of the general health, together with the use of such palliatives as the symptoms may require. Malignant fungi of the uterus are rare; those of a benign character are the most frequent.

(o.) Procidentia Uteri.

This is the displacement of the uterus in its healthy state from its natural situation; and when we consider how slightly it is connected with other parts, it may excite some degree of surprise that the displacement does not more frequently occur. It will require a long finger to reach the cervix when the uterus is in its natural situation. It is placed at the upper part of the pelvis, with its neck resting over the cavity of the vagina. The descent of the uterus into the vagina is the most frequent among females who stand much in the erect posture: and it would occur more frequently, if it were not, in the first place, that the uterus is small and light; in the second, that it is supported by its proper ligaments; in the third, that the vagina, on which it rests, is small. So long, therefore,

as the relations of these parts to each other are natural, the uterus will remain in its proper position; but if the vagina becomes wider, and the uterus heavier than natural, then the latter begins to sink into the cavity of the former. This is the state of the parts after parturition. The uterus is then preternaturally large and heavy: and having lately contained the fœtus and its appendages, some time must elapse before it is contracted to its original size. The vagina also is at this time much wider than is natural; and, having recently admitted the passage of a child through it, this part also will require some days to resume its natural capacity. Sitting up prematurely in the erect position after delivery very much disposes the uterus to this accident; and, in some patients, even when in the horizontal position, a trifling exertion, such as straining at stool, &c. will be sufficient to occasion procidentia uteri. I believe that nineteen cases in twenty arise from sitting up too soon after delivery. It is, however, by no means invariably connected with parturition; on the contrary, it appears sometimes to occur from mere relaxation of the parts, as in some emaciated subjects, without any obvious deviation from their natural size or structure.

The uterus descends into the vagina in different degrees. It may descend a little way, and require the introduction of half the length of the finger to detect it; or it may descend so low, that the cervix uteri protrudes through the external orifice of the vagina. The procidentia is called imperfect or incomplete, when the uterus is still within the cavity of the vagina; but when it descends so low as to appear

externally, this state is designated as the perfect or complete procidentia uteri. You must never forget that the uterus may be displaced without appearing externally: it is, however, then only that the women recognise the displacement. Many cases of imperfect procidentia have been mistaken for those merely of constitutional derangement. The stomach is sympathetically affected by the state of the uterus, and nervous affections and debility ensue, which have been treated with tonics, &c.; but when procidentia has been ascertained, if the uterus is properly managed, the constitution will take care of itself, and these symptoms will speedily disappear. How are we to discover the existence of this complaint? When the uterus protrudes externally between the labia, the patient herself will tell you that she has a falling down of the womb. If it is an imperfect procidentia, we suspect it from the pain which the patient experiences at the sides of the sacrum, from a sense of painful dragging in the region of the uterus, and of fulness and pressure in the vagina as if something was about to come away. If the patient assumes the horizontal position, these symptoms subside altogether, or are gradually relieved. The uterus presses both behind and before, occasioning a difficulty in passing both urine and fæces. These are the local symptoms. The constitutional symptoms are, a disordered state of the stomach and of the whole system, accompanied with a train of nervous sensations. It is here necessary to examine the patient per vaginam; but let me give you a caution, to which, if you do not attend, you may overlook the existence of the malady. We can examine patients in humble life as we please,

but those in higher stations require a little more ceremony. You must not direct your patient to continue in bed in the morning, and say that you will call and make an examination. If you do this, the uterus, after the patient has been in the horizontal posture all night, will, most probably, like a hernia, have returned to its natural situation; and not being able to feel it, you will pronounce that there is no procidentia. The procidentia is a mere hernia of the uterus. Rather direct your patient to empty the bladder and rectum; to get up, and to walk about for two or three hours, and examine her in an upright position. The uterus cannot then return; it must still be displaced. Always take care to have the bladder and rectum emptied previously to an examination, and examine in that posture in which the complaint is aggravated, as it is in the erect position. If the patient must remain in bed, prop her up well with pillows; but you may direct her to sit on the edge of a sofa, in which situation the examination may be made without any indelicacy; and you will not fail to discover the descended cervix uteri.

What are we to do in these cases? If the disease has been of long standing, there is but little expectation, from professional aid, of a radical cure. By prudent management *after a delivery*, the occurrence of this complaint is easily prevented; or if it had existed at a former period, this opportunity is highly favourable, if made the most of, for preventing its recurrence. But supposing a treatment to be instituted without the advantages afforded by parturition, we must, as in hernia, return the displaced parts, and keep them up by a kind of truss, which we call a

pessary. When the procidentia is not complete, the uterus readily resumes its natural situation; but when the procidentia is complete, it is often difficult to return it through the external orifice of the vagina. The best method of proceeding is first to apply cloths saturated in some cold lotion, with which the parts are to be kept constantly wet. By the evaporation of the fluid, such a degree of cold will be produced, as will induce a contraction of the uterus in a few hours, and permit its return with ease. After the uterus has been replaced, we prevent its descent by the introduction of a pessary.

When a disease is incurable, you have three hundred and sixty-five remedies; and when the uterus thus protrudes, you have three hundred and sixty-five instruments to keep it up; but they are imperfect. The common pessary is made of box wood; it is flat, with a circular hole in the middle. You reduce the uterus completely, and keep it up with your finger; then the pessary being greased—with its edge foremost, but not transversely, introduce it into the vagina gently, but perseveringly, not forwards against the pubes, but against the perinæum: when introduced into the vagina, elevate the edge which presses on the perinæum (by which the pessary will be placed transversely in the vagina, from ilium to ilium), until its flat surface is fairly turned uppermost towards the uterus, and thus you have a platform on which the cervix uteri may rest. The pessary should be so large as to be admitted with some little difficulty; for if it goes in easily, it will come out easily, and will not remain in the vagina. A little difficulty in the introduction of it ensures the preservation of its place.

The pain, however, occasioned by the introduction of the pessary ought soon to cease. If it continues, we conclude that the instrument is so large as to press uncomfortably upon the adjacent parts, and a smaller one must be substituted. The pessary which I have just described is an awkward one, and requires the surgeon to be constantly in attendance; for when the patient walks it is likely to slip, and the edge becomes tilted up. It is better to use one which the patients can introduce themselves. Such a one may be made in the following manner: — Take a piece of sponge as large and as long as a good sized egg, and of the same shape, and to prevent its swelling and dilating the parts by the absorption of moisture, cover it with oiled silk. This forms a soft and comfortable pessary. It is introduced with the small end of the oval first, and when in the vagina turn it, so that the ends shall be from ilium to ilium. Some use the globular pessary made of box wood: it is hollow and perforated with holes. If it shifts its situation, the same extent of surface is always presented for the support of the uterus. This and the sponge pessary I consider to be the best. As the flat circular pessary seemed to press on the urethra and rectum, flat oval ones have been recommended. When these are used, the mode of introduction is similar to that of the circular pessary, and their long axis should be from ilium to ilium. There is a French invention, which consists of a piece of leather stuffed with wool, and varnished. This is rather heavy. Pessaries of a similar shape have been made by Mr. Savigny, of caoutchouc; they are hollow, that they may be the lighter. These, as long as they are cool, do very well; but after remain-

ing in the vagina a little while, the air in them becomes rarefied, expands, and bursts the pessary with an explosion which is not very agreeable to the patient. A lady who suffered from procidentia uteri devised a pessary for herself, which was thus made: — Melt four ounces of bees wax, together with a piece of mutton suet the size of a walnut, and pour it into a box of the requisite size, which has a pillar in its centre; turn it out when cold, and you have a thin cake with a hole in the middle. Thus a pessary is formed, which the lady herself has found a very effectual one, and it has also afforded relief to many poor women whom she has supplied with it. The pessary should be taken out every night. The circular hole should not be very large, lest the cervix uteri should descend into it and become strangulated; yet it must be so large as to admit the passage of the menstrual fluid. The globular and the sponge pessaries appear to be the best, to either of which some tape may be attached, which will assist in taking it out. If, when the box pessaries are used, they are not so large as to be introduced with some difficulty, they may drop out, to the distress of the wearer.

In chronic cases of procidentia uteri, you must return the displaced uterus and apply a pessary, which must be regularly worn; in conjunction with this, you must endeavour to induce a contraction of the vagina by the employment of astringent injections or lotions, as one drachm of alum dissolved in half a pint of the decoction of pomegranate bark, which may be applied three times a day. These cases are seldom cured: but when the complaint is recently discovered, that is, within a month or six weeks after its occurrence,

a cure may be expected. If pregnancy should take place, the uterus, of course, soon after the third month ascends spontaneously into the cavity of the abdomen; and if the case, as formerly mentioned, is well managed after delivery, a cure is probable. Here you have two objects of attention: the first, to ensure the most strict observance of the recumbent posture, until the uterus has resumed its natural size and weight; and the second, to aid the contraction of the vagina by means of the astringent lotion. The best method of applying it is by a cylindrical piece of sponge dipped into it, and introduced into the vagina; it should be constantly worn, and wetted occasionally: this method is to be preferred to the use of the syringe, as by it the lotion will be applied constantly. This plan of treatment is to be continued for three or four weeks; the patient may then be allowed to assume the erect position for a few minutes, to ascertain whether it is productive of pain; if not, some hope of a cure may be entertained. You still, however, keep her in the recumbent state for three or four weeks longer. Some persons apply cold by means of a bidet; others by cold injections into the rectum, by the shower bath, or by cold sea-bathing, if convenient. It is very difficult to keep the patients suffering under this complaint, uniformly in the recumbent position; if they sit on the sofa with their legs up, and the trunk erect, they suppose it to be quite sufficient; but this position is as pernicious as standing upright. Let *the body* be in the *horizontal posture*, and we care not where the legs are. For the relief of the disorder of the stomach, and of the nervous irritation, aperient medicine must be given, so as to procure an evacu-

ation from the bowels twice a day, together with bitter or acid tonics. The imperfect procidentia uteri is often overlooked, and the case treated merely as a stomach complaint. Two very eminent physicians were consulted by a lady; they treated her case as one of disordered stomach: after a lapse of time, another physician was consulted, who, from the uneasy sensations and weight experienced about the pelvis, in conjunction with other symptoms, concluded that there might be an imperfect procidentia uteri. He examined, and found it to be so. He returned the uterus, and introduced the globular pessary, after which the stomach complaints ceased in about a week. The physicians who were first consulted were both men of ability, and of high rank in their profession; but they declared that they never heard of a procidentia uteri, in which this organ did not protrude externally.

(p.) Chronic Inflammation of the Uterus.

Acute inflammation of the uterus, unconnected with pregnancy, is a rare disease; but its occurrence soon after delivery is frequent. Chronic inflammation of this organ, in the unimpregnated state, is very common. The patient complains of a fixed pain in the region of the uterus, aggravated by motion. Pressure above the pubes occasions pain. Pain is felt also at the extremities of the round ligaments. Pain is experienced on touching the cervix uteri in an examination per vaginam. With these symptoms there is loss of appetite, and a disordered state of the alimentary canal. Chronic inflammation of the uterus fre-

quently succeeds abortion; for women do not attach the same importance to this as to labour at the full period of pregnancy, but get up in two or three days and walk about. In ten or fourteen days after this exertion, they sometimes begin to experience the above symptoms. This complaint is also sometimes owing to the insufficient clothing of our English females; and sometimes to a disordered function of the digestive organs. But it is often difficult to trace the disease to its cause; for it is allowed to exist week after week, and a month or two may, perhaps, elapse before we are consulted.

In the treatment of this disease, the bowels must be kept relaxed by so much castor oil as will procure two evacuations daily, leeches should be applied over the region of the uterus, together perhaps with cupping on the sacrum, and alterative doses of mercury, such as five grains of Plummer's pill, should be taken every night; the patient should also use a hip bath every night for ten minutes at 94 degrees, and during the day should keep the recumbent posture on a sofa. This plan must be pursued patiently and perseveringly, as several weeks may elapse before any amendment is perceptible. After the mercury has been taken two or three weeks, it frequently produces a tenderness of the gums, and most commonly the symptoms disappear as soon as this effect has taken place. I have no doubt that dysmenorrhœa is frequently owing to chronic inflammation of the uterus. The aching pain in the region of the uterus then continues from one menstrual period to another, and is aggravated during the discharge. From this view of its pathology, the treatment just recommended for

chronic inflammation of the uterus would be equally proper in this form of dysmenorrhœa.

(q.) Cancer Uteri.

Chronic inflammation of the uterus, if neglected, or unskilfully or unsuccessfully treated, may continue month after month, year after year, and then terminate in scirrhus. When this disease has occurred, the inflammatory symptoms subside, and the tenderness on pressure on the region of the uterus, or on the cervix uteri, on an examination per vaginam, ceases; but the situation of the patient is not improved: on the contrary, the constitutional symptoms and the disorder of the stomach are increased; there is a discharge from the vagina resembling that of leucorrhœa; the uterus, though not painful, is enlarged and heavy; and the countenance is leucophlegmatic. All cases of chronic inflammation of the uterus do not terminate in scirrhous deposition, yet we should regard them with a jealous eye. In this stage of the disease, what is to be done? The principal object is to prevent or subdue inflammatory action, as by the recumbent position, by mild purgatives, by a light but nutritious diet, by occasional depletion, and by the alterative doses of mercury which have been mentioned in the preceding section. Sometimes, under this mode of treatment, more especially by a slight mercurial action upon the system, the scirrhous deposition disappears; and on examination per vaginam, instead of a hard gristly cervix uteri, you will find this part, in a few weeks; of its natural softness. Every thickened and enlarged uterus is not a scirrhous uterus; but we

should look on them all with considerable suspicion. Scirrhus, or cancerous disease generally commences in the cervix uteri. In some cases the disease is indolent, and remains stationary for years, while in others the progress is more rapid towards cancerous ulceration. We distinguish them as the benign, and the malignant. In cases of the malignant character, the inflammatory symptoms recur, darting pains are felt, as if needles were piercing the part, ulceration takes place, and this state constitutes cancer uteri. The leucorrhœa which before existed now becomes a fetid dicharge—you can even smell it when by the bedside of the patient; the disorder of the stomach, and constitutional irritation, become worse; the patient passes sleepless nights, pain in the pelvic region is constant, with occasionally lancinating pains; the countenance has a worse expression, and the pulse becomes weak and irritable. When you examine per vaginam, the cervix uteri is painful to the touch; and instead of the natural nipple-like projection, its surface is broad, hard, ragged, and chapped. The extent of the disease may be the more accurately estimated by an examination by the rectum, as well as per vaginam. Dysury is sometimes experienced in the progress of the disease. This dreadful disease occurs generally between the age of forty-five and fifty years. It is irremediable. The ulceration extends in all directions; and as it proceeds, vessels are laid open, and hæmorrhage takes place; the patient faints, and appears to be almost lifeless; the fainting stops the bleeding, and the constitution rallies, but again to sink; and if the repeated hæmorrhage is not fatal, the ulceration proceeds backwards into the rectum,

and forwards into the bladder, occasioning an involuntary discharge of their contents into the vagina, which is now become a common receptacle for urine, fæces, and the fetid discharge from the uterus. I have been surprised to see patients live so long in this stage of the disease. I find them with their eyes half closed, mouth half open, with a corpse-like countenance, roused only by pain, which would now and then occasion screams or groans: on the subsidence of the pain they relapse into a comatose state; and I have known them continue in this state for ten days.

With respect to the treatment, this disease admits of no cure; the patient must die, and the only object is to alleviate her sufferings until she is released by death. This we are to do by preventing a costive state of the bowels, which is a source of irritation to the constitution; by sustaining the system by a light nutritious diet, together perhaps with acid tonics; by the use of the warm hip bath*, and by anodynes: these latter will consist of the pil. saponis cum opio, extr. conii, and extr. hyosciami, given in sufficient quantities every night and morning. These will allay the pain, but they disorder the stomach and impair the appetite. Another resource with a similar design is the introduction of anodyne suppositories of soap and opium into the rectum. Tepid anodyne injections are also recommended, with a view to relieve local irritation. The vagina should be regularly cleansed of the fetid and irritating discharge, by injections of warm water. Dr. Osiander, of Göttingen, has in some

* This remedy may perhaps not be unexceptionable, if there is any disposition to hæmorrhage.

instances removed the diseased portion of the uterus. Extirpation is the only remedy for cancer of the breast*, and why not have recourse to a similar operation here? but we must consider that the uterus is a part situated deeply, and difficult to be got at. Dr. Osiander introduces four crooked needles armed with broad ligatures, and passes them through the cervix uteri before and behind, and at either side. This being done, he pulls at the four ligatures, and produces procidentia uteri. He then cuts away the cervix, the part most commonly diseased, with a bistoury or with scissors. The bleeding is to be restrained by astringents, or by the introduction of a sponge. Dr. Osiander has not been candid enough to give us the result of *all* his cases. A continental surgeon, who saw this gentleman extirpate a cervix uteri, supposed by the operator to be cancerous, told me that the disease was decidedly not of this nature. In this manner the cervix, and as much of the body of the uterus as appeared to be diseased, has been removed; it is proper, however, to observe, that if the vagina is wounded, and the peritoneum cut through, an opening will be made into the cavity of the abdomen through which the intestines will descend. This operation for the cure of cancer has not been performed with success in this country. All the efficient treatment of cancer uteri with which I am acquainted, has for its object to alleviate the suffering of the patient.

* It must be confessed, a very problematical one.

(r.) Ovarian Dropsy.

The ovaries of the human female are not larger in their natural state than a pigeon's egg. They are liable from disease to be distended so as to form an immense sac, containg an enormous quantity of fluid, either in one cyst, or in many. In the latter case, the disease is called the encysted dropsy of the ovaries. In ovarian dropsy, a tumour, or induration, of small size and extent, may be discovered by pressure on the abdomen just above the groin, and will perhaps be best ascertained by a rotary motion of the fingers, which receive, obscurely, something like the impression of a ball situated deeply in the pelvis. It is of great importance that the practitioner should have an opportunity of ascertaining the existence of this tumour in an early stage: if he is first called to a patient suffering under this disease when the whole abdomen has become enlarged, he must take the description of its first appearance upon trust; and it is not always easy to obtain from the patient a clear account of the origin or progress of the disease. He will, however, on enquiry, generally learn that the tumour commenced *on one side of the abdomen*, and extended from thence all over it. The existence of fluid in the abdomen may be generally ascertained by placing one hand flat on one side of the abdomen, and striking the opposite side of the abdomen with the other hand; but the fluid is not always to be discovered by this mode of examination, if it is either unusually thick and viscid, or if it is contained in innumerable cysts. This disease may be mistaken for

physconia omentalis. The patient walks about, looks healthy, the only inconvenience being that of a distended abdomen; and this exemption from constitutional derangement, or the usual symptoms of disease, affords an additional ground of distinction between ovarian dropsy and ascites. The constitution, however, at length begins to suffer, the abdomen becomes more distended, the patient loses flesh, the system becomes exhausted, and death finally ensues. On examining those who have died of ovarian dropsy, the ovaries are found to contain in different cases different kinds of fluid, which may be in one, two, or three, or in a great number of cysts. The contained fluid may be thin and watery, or it may resemble bloody water; it may be of the consistence of gruel, or a complete jelly. The quantity differs in each case; it may vary from a few quarts to ten or twelve gallons. So large a quantity has been drawn off from a patient by the operation of tapping, that the fluid has been placed in one scale and the patient in the other, and the former has preponderated.

The general object of treatment is to excite the action of the bowels and kidneys by hydragogue purgatives, or by diuretics and mercury; these means, however, produce but trifling diminution of the tumour, and often disorder the general health more than they reduce the size of the abdomen. The enlargement of the belly increases; the patient can bear the distention no longer. You tap her, and the abdomen becomes flat and flaccid; but it fills again; and every succeeding time you draw off the fluid a greater quantity is evacuated, and a less space of time elapses between each operation. The constitution becomes

debilitated, and the health more disturbed. Irritation from the puncture may extend to the cyst, and produce inflammation there, attended by heat of skin, a tender belly, and a quickened pulse: to subdue these symptoms the patient's constitution is further reduced. On the next tapping, the fluid is mixed with pus. At last there is an attack of inflammation which is fatal; or the patient dies from irritation and exhaustion. As the common mode of treatment generally fails, Hunter and Darwin suggested a radical cure, by extirpating the ovaries when comparatively small. I have been surprised, on a post mortem examination, to find that the diseased ovary had acquired no preternatural adhesions. The proper time for the extirpation of an ovary must be when the tumour is small: but we are not, perhaps, in this stage quite certain that the ovary is diseased; and the patient suffers so little from it, that it is not likely she would submit to the operation.*

Some practitioners have attempted to cure this disease as you cure hydrocele, by injection. The result has been unsatisfactory. Others have recommended keeping the wound open, after tapping, with a bougie, by which the fluid is permitted constantly to dribble away, in order that the cyst might contract; the wound then becomes a fistulous opening, and the cyst ceasing to secrete, it finally heals. This method

* The operation for the removal of the diseased ovaries has lately been performed with success by Mr. Lizars and others. See Observations on Extirpation of the Ovaria, with Cases, by Mr. Lizars; Edinburgh Med. and Surgical Journal, vol. xxii. p. 247. and vol. xxiv. p. 174.

has been practised many times, and patients have been cured. I have frequently seen it done, and very little inflammation has ensued: in one instance the inflammation was very considerable; but it was subdued; adhesion took place in the cyst, and there was no return of the complaint. In a patient of my own, after the second tapping, inflammation supervened, with great pain, a rapid pulse, &c. I bled, purged, and blistered, and the inflammatory action subsided. She had no return of the dropsy. I have since tried this method of treatment, but have not been equally successful. The patients were much emaciated, and their constitutions broken down; inflammation was excited by the wound, and death ensued. On examination, the belly was found to be distended with a puriform fluid. Had I succeeded in several cases, I could recommend this treatment with confidence; but as I have succeeded only in one, I do not feel justified in such recommendation. It is, however, proper that this should be mentioned among the expedients which have been proposed for the cure of this disease. The choice lies between these three modes of treatment:—First, Evacuate the fluid by tapping as often as the belly is sufficiently distended. Second, Tap, and keep the wound open. Third, Defer tapping as long as you can. The last I believe to be the best; for those live the longest whose cysts are the least meddled with. As by repeated tapping the fatal termination of the disease is hastened, your efforts should be directed to the preservation of the general health, as by attention to the bowels, perhaps tonics, unstimulating but nutritious diet, &c.; and the cyst must be left to take care of itself.

LECTURE THE SECOND.

OF PREGNANCY.

SECTION I. *Theory of Conception.*

THE offspring, both of animals and of plants, are propagated by different modes. If you place a slip of geranium in a pot of earth, and give it the advantage of a favourable situation, all those parts will be produced which will constitute a perfect plant; many vegetables, and some animals, the polypi for instance, may be propagated in this manner. The polypi are found in fresh water rivulets: upon inspection these animal bodies are found to be of a conical form, with a hole in the middle. If touched, they shrink up into a lump resembling jelly. Their mode of propagation is singular. If you cut off a piece of one of them, this portion will be developed into a complete polypus: nature propagates them in a similar way. Little warts or excrescences grow from the animal, fall off, and become polypi. Before their separation, you see other excrescences on these, and others again on them, so that they begin to propagate before they are born; that is, before their separation from their parents. This is the simplest mode of propagation. As we ascend in the scale of organised beings, the manner of propagation is more complicated; so that two become necessary for the production of a third. One

contains in certain organs the substance of the future progeny, the other stimulates, by appropriate organs, the system of its mate to develop this germ : the first are the organs of the female, the second those of the male. Some animals have the organs of both sexes, as the garden snail ; these are called hermaphrodites. Nevertheless, two of these animals are necessary to complete the act of procreation, and this is done by a double copulation.

There is but one system of generative organs in each individual of the higher classes of animals. In fishes a contact of the sexual organs is not necessary to procreation. The female deposits eggs (or spawn), and the male spirts his semen over them, and they are thus fecundated. In the frog species, the male stimulates the functions of the female by getting upon her back, and remaining there for several days : at length she spawns, and he spirts his semen over the eggs. Some animals impregnate all the ova to be deposited in a certain period ; as the cock, by one copulation with the hen, fecundates numerous ova : nay, there is a species of snail, the female of which, though precluded from its birth any intercourse with the male, produces offspring, which also, under similar circumstances of seclusion, continue the species for seven or eight generations.

In some animals the germ of the offspring is shut up in a case, containing also a certain quantity of nourishment, as is exemplified in the egg, the animals producing which are called oviparous : these, for the most part, build nests, and there deposit their ova, keeping them warm by an action of instinct termed *incubation*, until the young burst the shell and escape

from their confinement. Some animals have a nest in their body, where their eggs are deposited, and these are denominated ovo-viviparous, as the Surinam frog, which lodges her eggs on her back. The kangaroo lodges the germ of the future animal, in a very minute state, in a pouch in the under part of the abdomen; others do not deposit the germ, as an egg, externally, but the ovum is still contained in the animal in which it was formed, in which it becomes fixed and rooted, and draws its nourishment from the parent until the period of its being born alive, as in the human species, and in most animals with which we are familiar: they are, therefore, called viviparous.

The propagation of the species, whether among animals or vegetables, consists in the separation of a certain portion from themselves, which has the peculiar power of living, growing, and becoming like its original: the slip of geranium, and the ovum of the animal, are similar in this respect. What is the nature of the substance which displays this singular power? An opinion has been entertained, that no process of animal organisation could produce this peculiar substance, and that it had its origin at the creation of man: this is the doctrine of *Epigenesis;* and its advocates maintain, that as there was only one creation, so, when Adam and Eve were created, all future beings were created also. This hypothesis arose from the difficulty of comprehending how the phenomena could be otherwise explained. Baron Haller entertained this absurd hypothesis. The modern notion, which supposes that the blood vessels of the ovaries have the power of secreting and of depositing a substance of the kind in question, is a little more rational.

We know that the stomach first digests all the materials of which the body consists, and that the secerning vessels deposit them in the form of bone, muscle, nerve, brain, &c. An elephant is a graminivorous animal, yet his secerning vessels transform the grass into flesh; and if grass can be thus changed, I do not see why food may not also be converted into the vesiculæ Graaffianæ.

It has been thought that the male produced the germ, but it is the female who produces and retains it. When microscopes were first applied to the purposes of physiological research by Leuwenhoek, he examined the semen of male animals, in which he saw, or thought he saw, animalcules moving about in different directions; and these he affirmed to be animals in miniature of the same kind as those in whom they were produced. Even in the time of Harvey, the discoverer of the circulation of the blood, all that was known about conception was, that if a male copulated with a female, in a certain number of days after impregnation a fœtus might be discovered in the uterus of the female, but how it came there the philosophers knew not. Harvey, in the reign of Charles II., was allowed to kill and dissect deer at all periods after impregnation: the ovaries were not suspected by him to be important parts of the organs of generation. To De Graaf we are indebted for the present theory. He examined the generative organs of rabbits at different periods after impregnation, in order to ascertain what change had taken place in them. In thirty-six hours he found the ovaries had undergone a change: these, in the unimpregnated state, contain a number of small vesicles filled with a

transparent gelatinous fluid, which, after their discoverer, have been called vesiculæ Graaffianæ. At this period, one of these vesicles was found to be elevated, and to project on the surface of the ovary like a minute nipple; in about forty-eight hours this enlarged vesicle had disappeared, and a cavity was left behind. What had become of it? There could be but one road; the ovaries, at this period, were firmly embraced by the fimbriated extremities of the Fallopian tubes, which in the natural state are at a little distance from the ovaries, and but slightly attached to them; — he said the vesicle must have proceeded through the Fallopian tube into the uterus. He endeavoured to trace it by slitting up the tube, but he did not at first succeed in discovering it: after repeated experiments he found it in its passage to the uterus; and remaining loose for a few days in the cavity of this viscus, it then acquired an adhesion to its inner surface. He killed other rabbits each succeeding day, which had been impregnated at the same time, and he saw the ovum gradually assume the shape of a rabbit, the developement of which he continued to observe until it had attained the full period of fœtal growth. Although he took considerable pains to demonstrate that the germ or ovum was originally formed in the ovaries, and thence descended through the Fallopian tube into the uterus, no one believed him. Haller could not discover the ovum in the Fallopian tube; and the fact was not received until confirmed by Dr. William Hunter, who went expressly to a rabbit breeder at Chelsea, accompanied by Mr. Cruickshank *, in order to verify

* See Phil. Trans. vol. lxxxvii. p. 197.

or disprove the statement of De Graaf. They saw, in the Fallopian tubes of rabbits, more ova in their descent from the ovaries to the uterus, than had been stated in the account of De Graaf.

Having thus far pretty clearly shown one part of the process of generation, the action of the male semen next became a subject of speculation with philosophers. It stimulates the ovum to developement. How does it act? Does it obtain a contact with the ovum? Some said it did; others said the ovum was impregnated by an aura which arose from the semen, and passed up the uterus through the Fallopian tubes to the ovaries. Either would have a very difficult passage. Dr. Haighton * performed numerous experiments on female rabbits, in order to decide this question. He divided both Fallopian tubes; thus cutting off the communication both of the semen and its aura with the ovaries. He found, on putting these rabbits with the buck, that they had lost all desire for venery; and if compelled to take the buck, were barren. He also found, that if he divided the Fallopian tubes of rabbits at any period less than forty-eight hours after copulation had taken place, the process of generation was at an end. But if the experiment was deferred to about fifty hours after the intercourse with the buck, then the process of generation proceeded naturally. He divided the Fallopian tube of one side only in other female rabbits, and found that the buck not only impregnated the ovary connected with the opposite tube, but that signs of impregnation † were visible also in the ovary

* See Phil. Trans. vol. lxxxvii. p. 159.

† Corpora lutea.

connected with the tube which had been divided. Before these experiments were instituted, a corpus luteum was considered to be an infallible sign of impregnation having taken place. A corpus luteum is a dense, yellow, caseous substance, which fills up the cavity left by the escape or rupture of one of the vesiculæ Graaffianæ. By the experiment just alluded to, it is shown that a corpus luteum is an effect of copulation, but not an infallible sign of impregnation; for corpora lutea were discovered in both the ovaries of rabbits, in which a division of one Fallopian tube had been effected prior to copulation. The only infallible test of impregnation is the presence of the fœtus.*

One of the strongest proofs that the semen does not pass up the uterus and through the Fallopian tubes is this, — that if you kill a doe rabbit just impregnated, and while she is warm introduce a blow-pipe into the vagina, you may blow, but no air will enter the Fallopian tubes, or even the uterus. Is it probable, therefore, that the semen should pass into it and through the Fallopian tubes? But if you in-

* This inference does not appear to be justified by the facts; the corpus luteum may be the effect *only of impregnation*, of which the proof afforded by the presence of the fœtus in the uterus could not be afforded if the Fallopian tube were divided; if corpora lutea are the consequences of copulation without impregnation, it may be presumed that the ovaries of most married women, to say nothing of those of ladies of a certain profession, would exhibit more of these appearances than are generally remarked in them. Corpora lutea are sometimes found in the ovaries of virgins: of their importance, therefore, as signs of conception, nothing is satisfactorily known. See a paper on the passage of the ovum, read by Sir E. Home, Phil. Trans. for the year 1817, part i. p. 252.

sert the blowpipe in a Fallopian tube, you may readily impel air into the uterus, and it will pass out from the vagina. There are some particulars relative to impregnation, which are important from their connection with medical jurisprudence. It may be asked what kind of copulation is requisite for impregnation? It is not necessary for this purpose that the male organ should be introduced far into the vagina. I was lately informed of a lady in whom, when in labour, the accoucheur found the hymen entire, so that he could not pass his finger into the vagina. I have met with a similar case; and such instances are not very uncommon. A woman who is paralytic in the lower half of her body, or who has long been confined to her bed by hemiplegia, and extreme emaciation *, may be impregnated. It is not necessary that the woman should be sensible at the time of impregnation, or that she should have pleasurable sensations; for some women never have, yet are very susceptible of impregnation. A maid at an inn, who was always thought to be virtuous, and bore a good character, began to enlarge in a way which excited suspicions of pregnancy: she solemnly declared that she never had connection with any man. At length she was delivered, and was afterwards brought before

* A case of this kind, in which the woman was much emaciated, and confined to her bed by hemiplegia, for at least a twelvemonth preceding her delivery, is communicated to the editor: the labour was accomplished with tolerable facility; but it appeared as if an abscess broke at the time of a pain, for there was a sudden gush of perhaps more than a pint of dark, offensive matter. The woman lingered for some time after her confinement, and died, as it was said, of cancer of the uterus.

a magistrate to swear to the father; but she repeated her former declaration. Not long afterwards a post-boy related the following circumstance: — That one night he came late to this inn, put his horses in the stable, and went into the house, and found all gone to bed except this girl, who was lying asleep on the heart-rug, and, without waking her, he contrived to gratify his desires. This shows that impregnation may take place without the knowledge of the female, or any excitation of sexual passion.

The urethra in men is sometimes imperfect, as from a stricture, which has closed the tube so as to prevent the passage of urine. Ulceration may take place in the perinæum, and a fistulous opening remain, through which both semen and urine are evacuated. Or, an imperforate urethra may be a natural defect, when also the urine is voided through the perinæum. In either case the husband cannot impregnate his wife; as the semen, during copulation, escapes through the opening in the perinæum. Mr. Hunter, indeed, mentions a case in which he directed the semen which escaped from the opening in the perinæum to be taken up by a syringe, and injected into the vagina, immediately after the act of copulation, which was followed by pregnancy.*

Section II. *The Gravid Uterus.*

Impregnation is followed by certain anatomical changes in the uterus, and other sexual organs. The

* This case is scarcely conclusive, as the wife might have tried a more natural method about the same time.

first change which occurs is in the ovaries, which, in their natural unimpregnated state, are small bodies of a glandular appearance, one on each side of the fundus uteri. Internally they look shaggy, and contain small vesicles filled with a transparent gelatinous fluid. These are the vesiculæ Graaffianæ, or the germs of future animals, requiring for their developement only to be stimulated by a sexual connection. If you examine an ovary a few days after conception has taken place, you will find on its surface a small fissure leading to a cavity, having its sides lined with a yellow caseous substance. This is the corpus luteum. It occupies the place left by the escape of one of the vesiculæ Graaffianæ, and is never so large and conspicuous as at the commencement of pregnancy: it gradually diminishes during the period of utero-gestation. The corpus luteum is at first soft, then becomes more solid, and at length disappears, leaving only a small fissure as a vestige of its having existed. Some persons will pretend to say, from inspection of an ovary, how many conceptions have taken place, but corpora lutea have been seen in virgins. No animal affords so good a specimen of the corpora lutea as the sow. Mr. Hunter spayed a sow on one side; she did not produce quite half the usual number of farrow, and ceased to breed at an earlier period than a perfect sow of the same age, though in every other respect subjected to the same favourable circumstances.* If you have an opportunity of examining any animal soon after conception, the number of corpora lutea will correspond with the

* See Mr. Hunter's paper on this subject, Phil. Trans. vol. lxxvii.

number of fœtuses. When a woman has conceived twins, there is a corpus luteum in either ovary, and not two in one ovary.*

Conception having taken place, the uterus undergoes a considerable change. It becomes greatly enlarged. In its unimpregnated state it will not contain a substance larger than an almond; but at the full period of utero-gestation it forms an immense sac, extending from the pelvis to the epigastric region, and will contain a fœtus of nine or ten pounds, or perhaps more, two or three pounds of secundines, and a quart or two of liquor amnii. It fills the anterior part of the abdomen, the intestines being behind. This enlargement conveys a sensation to the hand, which on many occasions, where a discrimination of the state is important, is worth attending to. The gravid uterus is hard to the touch; the viscera soft or tympanitic. If the woman is pregnant, the front of the abdomen is hard; and the sides, from the ribs to the anterior superior spinous process of the ilium, being filled with intestines, are soft, puffy, and flatulent. If you place a pregnant woman on her back, at the same time relaxing the abdominal muscles, the centre of the abdomen will be firm and hard, the sides lax and tympanitic. The umbilicus in its natural state is a little hollow; but towards the latter period of pregnancy it is elevated to a level, and for the last month

* On the subject of superfœtation there has long been a difference of opinion. It appears, however, that a new conception may take place while there is yet a fœtus in utero, whether alive or dead. See a paper on this subject by Dr Dewees, in Med. and Phys. Jour. vol. xvii. p. 489., and Burn's Midwifery, note p. 167.

prominent above the surface of the abdomen. In spurious pregnancy, or when the uterus is enlarged from other causes, this criterion is greatly to be relied on. But when the umbilicus is elevated, you must not always infer that the woman is pregnant; as this occurs in ascites, and is also produced sometimes by tumours which have no connection with the uterus.

The uterus, during its enlargement, was formerly thought to be stretched by mechanical distention. If this were the case, it would be extenuated, and almost membranous; but it is not so, for the uterus is as thick at the end as it is in the beginning of pregnancy its increase of capacity must therefore evidently be a result of growth, and not of mere extension. Some have said that its thickness becomes, during pregnancy, three times greater than in its unimpregnated state. This is erroneous; and I know how they have made the mistake. Women sometimes die about seven days after delivery, from puerperal fever, &c.: they are examined; and the uterus is found to be of that thickness, which is the consequence of a contraction in all its dimensions, by which its immense cavity is comparatively obliterated. But if a woman dies just before labour, the uterus will be found to be of its natural thickness, which is about one fourth of an inch. The changes of the uterus succeeding conception are not those of size only, but also of structure. The parietes become so soft and pulpy, that it is easy to thrust the finger through them; and I warn you, that if you have your hand in the uterus, and should, during a labour-pain, push your finger against it, nothing is more likely than that your finger will pass through its parietes. This softness arises from the great in-

crease in size, which the numerous vessels of the uterus undergo during gestation. If you inject with wax the whole uterine system of vessels of a woman who has died without being delivered towards the end of pregnancy, you will find numerous ramifications of vessels as large as crow quills on the external part of the uterus; in some particular portion (perhaps near the fundus) you will discover an immense congeries of vessels of the largest size, and to the corresponding internal portion of its surface the placenta is attached. Tear this substance away, and you will see that part of the uterus to which it adhered thickly studded with the orifices of the largest vessels of the gravid uterus. In those frightful hæmorrhages which sometimes occur after labour, the bleeding is not from the vessels of the whole surface of the uterus, but from those of this particular portion. Fortunately, the open mouths of these vessels undergo a considerable diminution of area by the natural contraction of the uterus during the separation and expulsion of the placenta.

The uterus, during gestation, is not only much enlarged, but it is lined with a thick pulpy membrane, distinct from its other contents. It is not a membrane of the ovum, but a production of the uterus. It is formed soon after conception has taken place, and before the ovum enters the uterus. It is called the decidua. In extra-uterine pregnancy, when the ovum either slips into the abdomen, or remains in the Fallopian tube, we find the uterus still lined with this membrane, which appears to consist of coagulable lymph, poured out as a consequence of the increased turgescence of the vessels of that organ. It is difficult to describe its connection with the ovum. The

whole inner surface of the uterus, except the cervix, is lined by this membrane; it passes between the placenta and uterus, to each of which it is attached, and is called the decidua vera; but just at the boundary of the placenta a portion is given off, which envelopes the ovum, as the pericardium does the heart: this is the decidua reflexa. There is yet another portion which is also given off at the edge of the placenta, and which passes over the front of it; and thus the placenta is contained between two surfaces of this membrane. This latter production has no name. There are, therefore, three portions of this membrane; the decidua vera, reflexa, and innominata. In the early period of pregnancy, as the uterus increases rapidly in size, it is not filled by the ovum; the decidua vera and reflexa are then at some distance from each other: but at the latter period of utero-gestation they are in close contact, and unite into one membrane.

The ovum is visible in the uterus at an earlier period after conception in small than in large animals. In rabbits, the ovum may be perceived in the uterus about the fourth day after impregnation, but in sheep and deer it is not visible until the end of the third week. In women it is visible in the uterus about twenty-one days after conception. Mr. Ogle met with a case, and Mr. John Hunter investigated it. The case was this.—A servant girl was attached to the footman of a family; and after keeping company, as they call it, for some time, she became low spirited, and ended her life by taking arsenic. The cause of this rash act was enquired into, and there was no doubt that the footman had succeeded in seducing

her: she apprehended pregnancy; and the menses not occurring at the usual time, her suspicions were confirmed: she waited only two days after the customary period of menstruation, and then took arsenic. Her fellow-servant knew that she expected to have been unwell on a certain day. — The uterus and its appendages were cut out, and carried to the house of Mr. J. Hunter. There was a corpus luteum in the left ovary, the vessels of which were much enlarged. The uterus was enlarged and turgid, and lined with the decidua, into which vessels had evidently shot; but the ovum was not to be found.* It is now generally stated, that you cannot discover the ovum in the uterus with the naked eye, or by the assistance of the microscope, in less than twenty-one days after conception. On the other hand, Sir E. Home has very lately examined the uterus of a female, who had been impregnated only eight days previously, in which he found an ovum of a very minute size.† According to this addition to our knowledge, the ovum must be visible in the uterus much sooner than has been hitherto supposed.

The ovum at first exists in the state of a membranous egg, filled with a semi-transparent fluid, in the centre of which is the embryo animal. At this period its parietes are composed solely of two membranes: the outer, the chorion; and the inner, the amnion. But soon after it becomes attached to the

* See Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. ii. p. 63.

† See a paper on the passage of the ovum, &c., read by Sir E. Home, May 1st, 1817. Phil. Trans. for the year 1817, part i. p. 252.

uterus, a considerable portion of its parietes presents a structure of a peculiar kind. On examining the ovum at the full period of utero-gestation, you perceive this portion, about a span in diameter, like a large sponge cake, which becomes thinner towards its circumference. This is the placenta, or after-birth, as it is commonly called. The ovum is filled with a fluid contained within the amnion, and thence called liquor amnii, in which the fœtus is suspended. The chorion has a different appearance at different periods of utero-gestation. If we view it at an early period, its whole external surface is covered with shaggy vascular projections; hence it has been called the spongy or shaggy chorion. This shaggy and flocculent structure of the chorion appears to be a provision to facilitate the adhesion of the ovum to the highly vascular surface of the uterus, to which it speedily becomes attached, and from which, through the medium of the placenta, it derives its nourishment to the full period of fœtal growth. As the period of gestation advances, these shaggy projections of the chorion are less obvious, and at length they disappear, except near the placenta. The chorion also gradually becomes thinner, more transparent, and easily torn, and its blood-vessels cease to be visible. The internal surface of the chorion is smooth; and there is usually between it and the amnion a small quantity of gelatinous fluid, which, towards the end of pregnancy, becomes absorbed, and these membranes are then in contact.

The amnion is a thin, dense membrane, smooth both internally and externally, perfectly transparent, and stronger than the chorion. No vessels have been

discovered in it even with the aid of injections; but vessels must exist, because, as pregnancy advances, the quantity of liquor amnii secreted by the inner surface of this membrane increases. The amnion is reflected over the funis forming its membranous covering.

If the placenta be examined without unravelling it, it looks like a cake; hence its name. It is a span in diameter, and about an inch in thickness, irregular, and lobulated on that side which has been attached to the uterus, which also exhibits the open mouths of its numerous vessels. If you macerate it, the spongy portion separates, and nothing is left but a congeries of vessels. One part of it communicates directly with the vessels of the funis umbilicalis of the fœtus, and the other part with the vessels of the uterus, but there is no direct communication between these sets of vessels. Thus anatomists divide the placenta into two portions, the fœtal and the maternal. If the placenta of a woman who has died towards the end of pregnancy is injected from the funis umbilicalis, that which is called the fœtal portion will be filled: and by injecting the arterial system of the mother, the maternal portion of the placenta will also be filled; but not a single particle of the injection will pass from the vessels of the fœtal into those of the maternal, or from those of the maternal into those of the fœtal portion of the placenta. The maternal is more spongy than the fœtal portion, and consists chiefly of cellular membrane, and of those numerous vessels formerly described, which communicate directly with those of the uterus. The fœtal portion consists of ramifications of the vessels of the umbilical cord.

The funis umbilicalis is composed of three vessels, two arteries, and one large vein: these proceed from nearly mid-distance between the centre and the circumference of the placenta, and enter the umbilicus, or navel, of the fœtus. These vessels usually run in a spiral direction: they are connected together by cellular membrane, surrounded by a viscid jelly, and covered by a reflected portion of the amnion; the whole constituting the umbilical cord, through which the circulation is maintained between the mother and the fœtus. The length of the funis is commonly about two feet; it varies, however, considerably both in size and length.* Neither nerves nor lymphatic vessels have been discovered either in the placenta or funis; and sensations cannot be imparted from either, to the mother, or the child.

The liquor amnii, so called from the membrane which contains it, consists chiefly of water, with a small quantity of albumen and muriate of soda. The use of the liquor amnii is manifest. During the whole

* A few years since I was called to a case of difficult labour, which had continued for about forty hours; the forceps having failed, the delivery was accomplished by opening the head of the child: a tremendous flooding immediately ensued, which, however, was restrained by the usual means. In this case the fœtus had attained its full growth; it was deficient in its right lower extremity, in place of which there was only a sort of cartilaginous projection, of the size, and about half the length, of one's little finger; there was *no funis umbilicalis whatever;* the placenta was adherent to the abdomen, and seemed to form nearly its anterior parietes. Circumstances which need not here be detailed, prevented an examination of the exact mode in which, through the placenta merely, without the intervention of a funis, the circulation was carried on between the mother and the child. — Ed.

period of utero-gestation, it protects the fœtus from the pressure of the surrounding parts; as a wax figure suspended in a bladder filled with water would not be injured by any external violence. If by any accident during pregnancy this fluid should be discharged, the membranes collapse on the fœtus, and the uterus contracts on them; and commonly within the period of twenty-four or forty-eight hours the action of the uterus becomes excited, and abortion takes place.* For this reason it is, that the membranes are sometimes punctured to produce abortion in those who ought not to be with child; and there are those of both sexes who are sufficiently depraved to be guilty of this practice. The practice is no doubt frequently a fatal one, as the introduction of an instrument for this purpose is difficult without injury to the uterus. Dr. W. Hunter attempted this operation on a young woman at about the third month of pregnancy. He found that he several times punctured the cervix uteri, and the case terminated fatally. If this happened to one of so much anatomical knowledge and skill, how much more probable must it be in the hands of

* A case has fallen within my knowledge, in which the membranes ruptured, and the liquor amnii was discharged at the commencement of the fifth month of pregnancy: trifling collections of this fluid continued to be discharged at frequent intervals during *ten* subsequent weeks; at the end of which time a living child was born, which survived about ten days. There was no appearance of liquor amnii at the time of the delivery; the funis was twice round the child's neck, and thus escaped the pressure of a contracted uterus, to which, probably, the continuance of the life of the child for so long a period after the evacuation of the water may be imputed. — Ed.

those ignorant men, by whom, for the purpose alluded to, the operation is sometimes undertaken! No doubt these attempts often prove fatal, but the murdered do not tell tales.

The os uteri, during the first stage of labour, gradually dilates; the membranes, distended with the liquor amnii, form a soft cushion which is forced by the action of the uterus against its mouth. But if the membranes are ruptured before the os uteri is fully dilated, this dilatation must be accomplished by the heard head of the fœtus, and the pain and difficulty of the labour will be much increased.

The fœtus in utero has some anatomical peculiarities which require a short description.

The thymus gland is situated in the anterior mediastinum. It is of a dirty white appearance externally, and, if cut into, contains a milky fluid. This gland gradually disappears after birth, so that in the adult there is no vestige of it. Its use is not known.

The structure of the lungs of a still-born child is nearly as solid as that of the liver; they are of a reddish brick-dust colour, and do not contain air. But if a child has breathed, the cells of the lungs are inflated, and, being filled with air, a detached portion of their substance will float in water. On the other hand, if the child has not breathed, and if no gas has been evolved by putrefaction, the lungs being still in their condensed state, a portion of them, if placed in water, will sink. You may sometimes be requested to give your opinion in a court of justice on the question, whether a child was still-born? A young woman, whose pregnancy has been suspected, is supposed to have murdered her child as soon as it was

born; the body is found, and you are called upon to ascertain whether the child has breathed. If it has breathed, the lungs will float; if not, they will sink in water. But this experiment is inconclusive; for the child may be still-born, and the woman herself may attempt to restore life by blowing down its throat. If she has done so with considerable force, the lungs will be as completely inflated as if the child had breathed, and, consequently, they will float in water. I have inflated the lungs of a still-born child, and they floated in water as if the child had breathed some days. The internal, putrefy sooner than the external, parts of the body. The child might be dead before it was born; putrefaction may have commenced in the lungs; thus air is generated, fills the cells of the lungs, and renders them buoyant.

The most remarkable peculiarity of the fœtus is its circulation. Its system of blood vessels differs from that found in the breathing animal, and the blood circulates by a different route. From the internal iliac or hypogastric artery of the fœtus, on each side, proceeds a branch (or rather the continued trunk itself of each artery) which passes upwards on each side of the bladder, emerges at the umbilicus, runs along the cord, or funis umbilicalis, and ramifies in the placenta with infinite minuteness. The umbilical vein is formed by the convergence of innumerable branches in the placenta, which finally unite into one vessel; and through this vein the blood passes from the mother to the fœtus, for the purposes of its nutrition and growth. This vein is enclosed in the funis; it passes into the abdomen at the umbilicus, and enters the liver at the cleft which separates this viscus into

the right and left lobes, to each of which it gives off branches: the most numerous go to the left side of the liver; one to the vena portæ, and another considerable branch, or rather the continued trunk of the umbilical vein, called the ductus venosus, passes direct to the vena cava inferior: those branches of the umbilical vein which are distributed in the liver, and also those of the vena portæ, discharge their contents into the inferior cava by the venæ cavæ hepaticæ. The superior and inferior cavæ enter the right auricle of the heart. In breathing animals there is a complete septum or partition between the two auricles, which prevents the passage of the blood from one into the other; but in the fœtus in utero there is a communication between the auricles. This opening or communication is called the foramen ovale, through which the blood passes from the right into the left auricle. Thus the two auricles are filled with blood at the same time, and contracting at the same time, propel their contents into the two ventricles: from the left ventricle the blood escapes into the aorta, and from the right ventricle into the pulmonary artery; which latter, instead of conveying all its blood to the lungs, disposes of three fourths of it through a vessel called the ductus arteriosus, which, proceeding from the pulmonary artery, enters the descending aorta. By this apparatus nearly the whole of the blood brought to the heart by the cavæ is sent from both ventricles into the aorta; part of this blood is returned to the placenta through the funis by the hypogastric arteries, and the remainder is distributed through the vessels of the fœtus. Thus the blood in the aorta of the fœtus is impelled synchronously by

the force of both ventricles; which is probably no more than is absolutely necessary for the accomplishment also of the more distant circulation of the placenta. Immediately on the child being born, and respiration taking place, the circulation is admitted through the lungs, the foramen ovale becomes closed by means of a valve, and its permanent obliteration is soon effected. Those vessels, also, which were alone subservient to the circulation of the fœtus in utero soon become obliterated, and exist only as ligaments of trivial or no use: whilst that portion of the circulation of the liver connected with the ductus venosus now becomes a part of the circulation of the vena portæ.

The liver in the fœtus is remarkable for its disproportionate size to that of the other organs. The capsulæ renales are two glandular bodies, situated above the kidneys, one on either side; in the fœtus they are larger than the kidneys themselves, and usually contain a little fluid; they gradually diminish towards the adult state: their use is not known. The kidneys are large, and of a lobulated structure. The intestines of the fœtus contain a dark semi-fluid substance called meconium; this was formerly considered to be black bile, secreted by the liver, but it has been ascertained to be a secretion of the intestines themselves. Bodies have been examined, in which there was no communication between the small and large intestines, both ending in a cul de sac; yet the latter were filled with this fluid. Its use is unknown.

Section III. *Position of the Child in Utero.*

This, nature has ordered in an admirable way, to embrace two objects: the first, the birth of the child

in the most favourable manner; and the second, the occupation of the least possible space. Generally the head of the child lies downwards, immediately over the os uteri: this position has many advantages, the largest part makes its way first, and the others follow with facility. In footling cases, the smallest part presents first; the largest are expelled with difficulty, and with great risk to the life of the child. It is remarkable with what regularity the occiput of the child lies toward the pubes of the mother, and the face to the sacrum, inclining towards the right sacro-iliac symphysis. You find this disposition in every common labour; and, as the child is expelled, you will observe that the face turns to the right thigh of the mother. It accommodates itself to the shape of the pelvis during its passage.

The child occupies as little space as possible. Its length is merely that of the body; the thighs are bent on the body, and the legs on the thighs; the face is pressed forward on the chest, and between it and the knees a space is left, which is occupied by the arms. When Dr. Hunter was taking a drawing of the position of the fœtus in utero, the celebrated painter Hogarth came in, and observed, that it was an excellent living specimen of retirement from the world.

Section IV. *Of the Signs of Pregnancy.*

Women generally know when they are pregnant, by certain symptoms which are commonly conclusive in ninety-nine cases in a hundred; but in the hundredth they are deceptive. A suspension of the menses at the accustomed period of their return,

generally confirms the suspicion of pregnancy in the mind of a woman who has reason to expect it. She may have conceived immediately after the last menstrual period, or immediately preceding that which should succeed to it. Some women pretend to know the exact time of conception, but their assertion is not to be relied on. Soon after conception the stomach often becomes affected with what is termed morning sickness; on first awaking the woman feels as well as usual, but on standing up a qualmishness begins, and whilst dressing, or putting a tooth-brush into her mouth, retching takes place. In two or three months certain changes may be observed in her breasts; they swell, and enlarge, with pricking, and darting sensations, like those attending the commencement of menstruation. The colour of the areola round the nipple, which, in the virgin, is of the beautiful pink tint of a young rose leaf, now becomes changed to a dull brown, more or less dark in different cases. In those who have blue eyes, fair complexion, light hair, &c. this change does not appear till late in pregnancy; but in those of dark hair, eyes, and complexion, the colour of the areola soon becomes deep. In the third month, and not before, the belly begins to enlarge, and gradually increases in size till the full period of utero-gestation. Between the sixteenth and the twentieth week after conception the uterus ascends out of the pelvis, and the motion of the child is felt; the period of the ascent of the uterus, which is termed that of "quickening," varies in different women. The first time the woman experiences the motion of the fœtus, the sensation is like that of the fluttering of a bird within her, and so

sudden that she frequently faints, or falls into an hysterical paroxysm. There may be an interval of days between the recurrences of this sensation; it afterwards increases both in frequency and degree. A sensation of tickling or of pushing, is occasionally felt; or the child gives a kick, or a jump, and this with so much energy as to move the petticoats, or a book, or any light article placed in the lap. It is important to remember these symptoms, and the order in which they occur:—first, cessation of the menses; second, morning sickness; third, swelling, and darting pains in the breasts, and dark colour of the areola round the nipples; fourth, the gradual enlargement of the abdomen; fifth, the movements of the child. Women rely so much on these symptoms that they engage the nurse and accoucheur; and in ninety-nine cases out of a hundred they are right, but in one in a hundred they are wrong. The symptoms are not infallible. They are for the most part present when a woman is pregnant; but a woman is not always pregnant who experiences similar symptoms, which may ensue from disease. The *suppression of the menses* may arise from other causes besides pregnancy; it would however be considered a sign of this state in those married women who have hitherto menstruated with regularity. But if it occurs in females of a delicate and puny habit, and who have been accustomed to menstruate irregularly, it is a very dubious sign of pregnancy. *Sickness* may arise from various causes, some of which have been formerly enumerated. *The breasts* may be full and large, attended with pricking and darting sensations, without pregnancy. Great stress is laid on the colour of the areola round the nipples:

and in a first pregnancy, (after which the brown colour, in a greater or less degree, becomes permanent,) it is a very important sign; but in chronic uterine inflammation I have known this dark brown colour produced, together with fulness, and pricking pains in the breasts. *The belly* may be enlarged from other causes, as dropsy of the ovaries, or ascites. And movements very similar to those occasioned by the presence of a child may occur, without pregnancy, from disorder of the digestive organs, accompanied by an enlarged abdomen. There is scarcely any one symptom of pregnancy which may not arise from other causes; and, on the other hand, pregnancy may exist without being accompanied by the usual symptoms, or they will be slight and equivocal until pregnancy is far advanced. I have seen a dozen cases, in which women for the first few months after conception have had discharges from the vagina which could not be distinguished from those of menstruation.

What are you to do when the nature of the case is doubtful? You must postpone giving a decisive opinion, till such time has elapsed as will enable you to ascertain, first, whether the enlargement of the belly is in consequence of an enlargement of the uterus; and, second, whether the increased bulk of that organ is occasioned by the presence of a living child. You must ascertain this both by an examination of the abdomen externally, and by an examination per vaginam. Some practitioners have said that you can discover the presence of a fœtus after two months of pregnancy have elapsed; but it cannot be done so early as this. Dr. Wm. Hunter stated that examin-

ations could not be relied on with confidence even during the first four or five months; but that in the sixth, or just at the commencement of the seventh month of pregnancy, you could pronounce with certainty on the nature of the case. Therefore *postpone the examination*, and of course your final decision, till the completion of the sixth month, and then you may be pretty correct, if you have arranged in your own mind *what you are to seek for* before you commence the examination. The seventh month, then, is the best period for an examination, and you have two points to ascertain: the first, that the enlarged belly depends on an enlargement of the uterus; and the second, that the bulk of that organ is occasioned by the presence of a living child. In the first place, make an external examination of the abdomen. Here you have three objects of attention: first, the navel; second, the solidity of the abdomen; third, the motion of the child.

(1.) The navel in advanced pregnancy is raised at least to a level with the surrounding integuments, but is generally above them. This is invariable in pregnancy, and is one of the best guides. If it is depressed as it is naturally, there is a little thimble-like cavity, and there is no pregnancy; upon which criterion the notorious impostor Johanna Southcote was pronounced correctly to be not pregnant.

(2.) If the enlargement of the abdomen is of a soft and yielding nature, and will admit of any depression of the anterior part when the hand is firmly pressed on it, the increase of size can scarcely depend on pregnancy. In a pregnant woman at an advanced period of gestation, the abdomen, *in front*, presents a

resistance as hard as a board, and it is a little puffy *at the sides* beneath the ribs.

(3.) You may be so lucky as to apply your hand on the belly just as the child moves: if it is quiet, you will often make it move by applying a cold hand (which, if requisite, may be immersed for a minute or two in cold water) suddenly on the abdomen; or by allowing the hand to rest for a few minutes, with a moderate pressure, on the abdomen, some movement of the child will frequently be felt. If you find the navel raised, the belly hard in front, and can feel the movement of the child, you have not much occasion to proceed farther; but if you still doubt, you must examine per vaginam, in which examination you have also three points of attention: first, the state of the cervix uteri; second, the body of the uterus; third, the movement of the fœtus.

(1.) During the first three or four months of pregnancy, the cervix uteri projects as far into the vagina, is just as long, and hard, and the os tincæ conveys the same impression to the touch, as in the unimpregnated state. About the fifth month the cervix becomes shorter, softer, and broader, and thus it goes on progressively. In the seventh month the neck of the uterus is diminished to about half its former length, and a hard tumour, which is the head of the child, may be distinguished through it. At the end of the eighth month the cervix is completely obliterated, becoming a portion which has assumed the general shape of the uterus.

(2.) You direct your attention to the size of the uterus by moving the cervix, thereby causing the whole to move; a sensation will be imparted, by which

you can ascertain whether the body of the uterus is enlarged and heavy, or whether, moving lightly, there is no enlargement of it; feel also whether there is a bulky solid tumour between the cervix uteri and the symphysis pubis. If the circumstances of the case render its nature still doubtful, (though it is a dirty trick) pass your finger up the rectum, when, if the uterus is enlarged, you will feel it bulging backwards into the hollow of the sacrum.

(3.) The head of the child rests on the cervix uteri and symphysis pubis. Place your finger midway between these two points, and suddenly push the tumour in a perpendicular direction, and in a moment or two, you will feel something drop on the top of your finger, indicating that a floating something has been pushed up, and then subsided into its proper place. Having thus ascertained these six points, you should be able to pronounce on the question of pregnancy with confidence.

There are three classes of persons by whom you are likely to be consulted, namely, young unmarried women, who will solemnly assert that they are not pregnant, yet have big bellies, &c.; women with ovarian dropsy; and married women, who think they are pregnant, when they are not. I will give you a little advice relative to the unmarried class. Never give an opinion till six months have elapsed since the last menstruation. Do not believe one word they say. Listen to them as you would to a jockey praising his horse. A medical man requested me to accompany him a few miles in the country to see a young lady in fashionable life, who had a peculiar tumefaction of the abdomen, and milk in her breasts, to which he did

not attach any importance. When we arrived, he said he had brought an accoucheur, a friend of his. I was permitted to examine her as I pleased. I laid my hand, which is naturally cold, on the abdomen, and felt the child move; the navel was raised, and the belly hard. This was enough to satisfy me; but as it was expected that I should do every thing that was customary, I introduced my finger into the vagina, found the cervix uteri obliterated, and a hard tumour resting on the symphysis pubis, and on pushing it upwards, I felt the child drop again on my finger. I went down stairs, and told the medical man she was with child. He was astonished. In six weeks after I delivered her of a child. I have met with many similar cases. Never rely upon the evidence of their tongues, but on that of their bellies.

An enlargement of the abdomen from ovarian dropsy sometimes gives rise to the suspicion of pregnancy. In these cases, if seven months have elapsed from the commencement of the enlargement, you will perceive, when you pass the finger up the vagina, the cervix uteri of its natural length and size; and you will otherwise discover that the character of the tumefaction is different from that of the gravid uterus. Women are liable to fall into a state in which their digestive organs are greatly disordered, attended with suppression of the menses, and enlargement of the abdomen; they engage their nurse and accoucheur, and there is no pregnancy. Women about forty-five years of age, when the menses are about to leave them, are the most likely to become thus affected: but these symptoms may occur in earlier life. A young man and woman fell in love with each other,

and although their parents objected, they contrived to get married unknown to them; they returned respectively to their homes, and lived with their parents to keep all quiet, but used to meet now and then. At length the female became sick in the morning, her abdomen tumid, so much so that her sisters remarked what a large belly she had; the young married female, taking it for granted that she was pregnant, as she had full breasts, morning sickness, and a cessation of her menses, confessed her marriage, and a house was taken in which she lived with her husband. At about seven months from the commencement of her symptoms I was consulted; when, on feeling her abdomen and finding it soft, I expressed a doubt as to the nature of her case. I then examined per vaginam, and discovered the cervix uteri as long as in the unimpregnated state, and upon this evidence asserted that she was not pregnant. I put her under a plan of treatment, consisting of purgative medicine every morning, so as to procure four or five evacuations daily, together with tonics. After this plan had been followed ten days, the purgatives were given only every second day: under this treatment she became perfectly well. A lady was sent me by Sir Astley Cooper for the purpose of ascertaining whether she was pregnant; I examined and found her not so. I gave her every morning pulv. jalap. comp. ℈ii., and directed her to keep a measure of the abdomen; in a few days it was lessened half an inch; every day it became smaller; and in a few months her symptoms had entirely left her. I see these cases often, and they are cured by the com-

bination of purgatives with tonics; but of these means the purgatives are the most essential.

Section V. *Diseases of Pregnancy.*

The natural period of pregnancy is nine months. This period is liable to be abridged by peculiar states or circumstances incident either to the uterus itself, or to other parts of the system. To speak first of the latter. During pregnancy the head, chest, stomach, liver, bowels, &c., are liable to consequent derangements: pregnant women frequently suffer from headach, sense of throbbing, or giddiness. These symptoms depend on one of two causes, either upon too great a fulness of the vessels of the head, or upon a disordered state of the stomach and bowels. Some cases of this kind are relieved by bleeding, others by purging in a more remarkable degree. When we prescribe, we must be guided by general constitutional signs: if the patient is of a full habit, with a florid countenance, and a strong firm pulse, the symptoms most probably arise from a determination of blood to the head; she may have been many years regularly preparing six or eight ounces of blood more than was necessary for the support of the system, which was as regularly evacuated by menstruation; but pregnancy taking place, this discharge is suspended; and as the fœtus, during the first month or two, requires but little for its support, plethora may succeed to the cessation of an accustomed discharge: the symptoms are, therefore, relieved by the abstraction of eight ounces of blood from the arm, together with such purgatives as will procure two or three

evacuations daily, a spare diet, and abstinence from fermented liquors. When the affections of the head are moderate, they seldom produce any serious consequences; when the determination to the head is more considerable, it sometimes produces short fits of blindness, or there is an appearance of sparks or flashes of light, &c.: these symptoms must be watched with great attention, for they may end in puerperal convulsions; and the depletion must be active in proportion to their severity. When affections of the head occur in females of weakly and delicate constitutions, being produced by disordered stomach and bowels, indicated by a furred tongue and unnatural secretions, they are not usually relieved by bleeding: here the treatment must consist of purgatives, by which the system will be relieved of the vitiated secretions of the alimentary canal; afterwards tonics may be given.

Pregnant women sometimes suffer from nervous irritation, which occasions palpitations of the heart and congestion of the lungs, with dyspnœa. In some instances the symptoms are the common ones of inflammation of the chest, as violent cough, difficult breathing, hot skin, and a quick hard pulse. Such remedies must be employed with vigour as abate inflammatory action. Abstract fourteen ounces of blood; and, if this bleeding does not give relief, you must repeat it, adopting an antiphlogistic treatment in other respects till the circulation is tranquil, and the cough easy. Small doses of opium and hyoscyamus may sometimes be given to relieve irritation, when there is no reason to suppose the disorder to be of an inflammatory kind, or when the inflammatory

action, if it before existed, is subdued by appropriate treatment.

Towards the latter end of pregnancy hæmorrhage from the lungs may occur, attended with cough and expectoration, full pulse, and hot skin. I cannot say what connection this has with an inflammatory action; these symptoms are, however, relieved by the antiphlogistic remedies. If a patient, when in labour, suffers from pulmonary hæmorrhage, there is an urgent reason for hastening the delivery of the child, which I should accomplish as soon as the head was within reach of the forceps.*

It is remarkable that pregnant women scarcely ever feel sick until they first get on their feet in the morning, and hence it is called the morning sickness; at breakfast they have no appetite, and experience some nausea; as the day advances the sickness goes off, and at dinner their appetite is pretty good. This irritability of the stomach often arises from a foul state of the alimentary canal, or from plethora of the vessels of the stomach. The symptoms are relieved by medicines which evacuate the alimentary canal; by allaying irritation; and by taking blood from the epigastric region by means of leeches, or else from

* The editor is informed of a case in which the hæmorrhage from the lungs was copious *at the commencement* of a labour; it was treated by bleeding, followed by an active purgative of calomel, salts, and jalap; as the labour advanced, the hæmorrhage diminished, and finally ceased: the woman was delivered naturally, and did well. This case is not adduced as a general precedent, but in addition to the medical treatment suggested by it, the recollection of it may, perhaps, prevent a premature, or, in some instances, unnecessary employment of instruments.

the arm. This sickness often ceases spontaneously after the period of quickening. The morning sickness is best prevented by allowing the patient but small meals of light nutritious diet, by attention to the bowels, saline draughts, and regular exercise. Thus, give an effervescing draught in the morning, allow a scanty diet of light nutritious food during the day, and give such an aperient every night as will ensure one or two evacuations the following day. The purified extract of aloes is the best medicine, and two grains are usually a sufficient dose. Patients seldom ask our advice on account of this common indisposition, but follow that which is recommended to them by nurses and others: when they do consult us, there is in general a good deal of derangement of the bowels, indicated by furred tongue, costiveness, &c., which is best treated by small doses of the purified extract of aloes, to which an equal quantity of the extract of hyoscyamus may be added if it should occasion griping. Some practitioners begin with emetics in these cases, and they often do good; but you must inform your patients of what is intended, as they have a great aversion to emetics. When the bowels have been well purged, and the tongue has become clean, prescribe tonics; as the diluted sulphuric acid with infusion of columba, or other slight bitters. You will not succeed in relieving your patients, if you do not proportion the quantity of their food to the diminished powers of the digestive functions. But patients do not like to be put upon short allowance; as they cannot eat at breakfast, they make up for this deficiency by eating as much as possible at dinner and supper, in conse-

quence of which their sleep is disturbed, and they become feverish.

Sickness during pregnancy is not always occasioned by disorder of the digestive functions. In such cases the nausea arises from uterine irritation, with which the stomach sympathises. Some women are sick every time they copulate, so intimate is the sympathy between the stomach and the sexual organs. These are cases of irritation of the stomach, induced by the particular state of the uterus. To relieve the irritability of the stomach, give soda in the effervescent state with peppermint water. I have found a fourth part of the following mixture, given three times a day, of great use: — Magnesia, one drachm; tinct. columbæ, half an ounce; distilled peppermint water, five ounces and a half. Delicate stomachs will not bear peppermint water, made, as it commonly is, with the essential oil. Diet must be strictly attended to, the plan of which cannot be better than that which you hear so often recommended in this place by my able colleague Mr. Abernethy.

If the irritability of the stomach is very obstinate and distressing, give no nourishment at all at this time for twelve hours; if the mouth is dry, moisten it with a little cold water, afterwards allow a small quantity of food, perhaps some weak chicken broth; prohibit the taking of food again during the next six hours, and direct the patient to drink once at about the middle of this period. Many cases, which have resisted all other means, have been much relieved by this treatment. Dr. Vaughan speaks of the powerful influence of opium and starvation, when properly regulated. A lady had taken various remedies with-

out benefit, and it was thought the vomiting was now kept up by habit. It was, therefore, proposed that she should abstain from all food four-and-twenty hours, at which time her appetite returned, the vomiting ceased, and she recovered. Opium is not requisite in all cases of irritable stomach; but in those of unusual obstinacy it may be given with advantage. Keep the stomach empty ten or twelve, and let the patient take half a grain of opium every six, hours. In some cases of this description there is a hot skin, a rapid circulation, with pain and tenderness about the præcordia; these symptoms require blood-letting, as from the arm, to the amount of eight ounces, or by the application of a dozen leeches to the pit of the stomach. The abstraction of blood greatly relieves this sub-inflammatory or plethoric state of the stomach: mild saline aperients are also to be directed, together with the recumbent position. In sea sickness it is a common experience, that persons who are immediately sick on sitting or standing upright, are perfectly free from this distressing affection so long as the recumbent posture is strictly preserved.

Pregnant women are frequently troubled with *cardialgia*. This is a symptom also of a disordered state of the digestive organs. An acid is formed in the stomach, it rises into the œsophagus, and, from the sensation it produces, is called "heart-burn." Women know that a little chalk or magnesia relieves this complaint, we therefore seldom hear any thing of it; but if consulted respecting it, the best remedy I am acquainted with is ten drops of the solution of the subcarbonate of ammonia, and fifteen grains of mag-

nesia, with an ounce of distilled peppermint water, taken three times a day.

Towards the latter period of pregnancy, women are subject to pains in the right hypochondrium, and sometimes in the left. The pain at first is slight. They suffer little in the morning, but a few hours after dinner the pain becomes more violent; they are obliged to lie on the sofa, and generally make pressure over the part with their hand; it does not produce abortion, but it is very distressing. I believe it to proceed from irritation of the liver; for nothing relieves this complaint so speedily as those cathartics which act on the liver. The mercurial are much more effectual than the common cathartics. When the symptoms are very severe, apply ten or twelve leeches to the part, and promote the bleeding by warm water. Give a brisk purge of calomel and compound extract of colocynth; after which keep the bowels relaxed with three grains of pil. hydrargyri, and three grains of the purified extract of aloes, given every night. The wife of a medical man had suffered severely from the above symptoms; she had been bled, had taken opiates, and various remedies, without any benefit: at length her stools were examined, and they were found to be black. The pil. hydrarg. and extract of aloes were given, and after taking a few doses, the symptoms, which had resisted all other medicines for weeks, were removed.

One of the most troublesome states incident to the latter period of pregnancy, is that of constipation. The bowels of women are costive at all times, but much more so during pregnancy. Dr. Denman thought it a natural state, and that it should not be

interfered with. Sometimes a week elapses without an evacuation. Hence there is an extraordinary accumulation of fæces, which gives rise to colic, tenesmus, frequent desire to evacuate the bowels, the attempt at which is followed only by a thin watery discharge. The complaint is sometimes supposed to be diarrhœa, and chalk is given; but if the finger is introduced into the vagina, the rectum will be felt distended with an immense heap of hardened fæces. If consulted by a woman far advanced in pregnancy, who has thin watery evacuations, succeeding to previous costiveness, and attended with pain, weight, and pressure about the rectum, rely on it the symptoms are occasioned by an accumulation of hardened fæces, and you must ascertain this by an examination. The sigmoid flexure of the colon is sometimes filled with indurated fæces, which at times produce inflammation, and sloughing of the gut, and death. A costive state of the bowels during the latter period of pregnancy may induce peritoneal inflammation after delivery. Many cases of sporadic peritoneal inflammation after delivery doubtless arise from this cause. What I mean to state is, that a costive and loaded state of the intestines is capable of producing peritoneal inflammation; therefore, both before and after delivery, this costive state should be guarded against. Should inflammatory symptoms appear, the proper treatment is to bleed, and to unload the bowels by purgatives.

The motion of the child, if this can be called one of the diseases of pregnancy, is often so violent as to alarm the mother. So strong and unpleasant is it in some cases, that it occasions sleepless nights, or, if the

patient does sleep, she has often frightful dreams. This seems to show that corporeal states, as well as external causes, convey ideas to the mind, or have an influence upon it during sleep. I have lately been told by two different patients, that in a dream they supposed themselves to be walking in the street, and that a man, who was driving a cart, insulted them and gave them a kick on the belly, and, on awaking, they have been conscious of a violent rolling and kicking of the child. The remedies which afford the greatest relief are bleeding, when not otherwise objectionable, to the amount of a few ounces, gentle aperients, and opium. It is a question whether opium has any sedative influence on the child, or whether it acts by diminishing the sensibility of the uterus to its impressions. In some cases relief is obtained by these means, whilst in others they fail; the patients are, however, consoled by this proof, that the child is alive and vigorous.

Œdema of the lower extremities is likely to occur, without any hydropic affection in any other part of the body, at the latter period of pregnancy. It is first remarked towards night about the ankles, by degrees the swelling rises higher, and the legs become of a very large size. The gravid uterus, by its pressure, both obtructs the return of venous blood from the lower extremities, and also compresses the absorbents. The patient goes to bed with her legs swollen; towards morning her face swells, and the swelling of the extremities disappears, but returns as the day advances. Sometimes the œdema is but trifling; at other times it extends not only throughout the lower extremities, but the labia pudendi are enlarged to

nearly the size of the head of a child. When labour comes on, the external parts being in this state, the accoucheur, mistaking this swelling for the child's head, may suppose so much of the labour to be over. When first in practice I made this mistake. I was called to a labour; the pains were severe: on examination I found a large tumour between the patient's thighs; and supposing it to be the head of the child, I requested the nurse to get every thing ready. Pain succeeded pain, but there was no advance of the shoulders. I then began to examine more minutely, and found the tumour to consist of an immense enlargement of one of the labia. Had I been more attentive at first, I should have discovered, as I did afterwards, that the skin on the outer side of the tumour was continuous with that of the upper part of the thigh, while the opposite side of the tumour only conducted the finger into the vagina. The labia may be thus enlarged without offering any considerable impediment to the delivery. In general no treatment is required; but if before labour comes on the swelling occasions much pain, I would let out the effused serum by a puncture with a lancet. A lady had both labia greatly swollen, and very painful; she refused to have them punctured unless I made use of my eyes, and the tumour which presented itself absolutely astonished me. In half an hour after an opening had been made into the labia, the bed was drenched with serum, and the patient was perfectly easy. I have heard of these punctures exciting inflammation and producing gangrenous ulcers difficult to heal, as scarifications in anasarcous legs sometimes do; but I have never met with an instance of the kind myself, and

am rather sceptical with respect to its having occurred.

Varicose veins of the lower extremities are very common during pregnancy. This state of the veins arises from the pressure of the enlarged uterus on their trunks, by which the return of blood to the heart is impeded. The remedies for this state of the veins are pressure, cold applications, and the recumbent posture. Pressure should be employed according to Mr. Baynton's method. First strap the leg with adhesive plaster, then apply over this a roller bandage with a moderate degree of tightness, and keep this bandage wet with common or with Goulard water. Practitioners are generally cautious in the employment of pressure, lest in consequence of a compression of the superficial veins of the legs congestion should occur elsewhere. To prevent this you must, in conjunction with pressure, take away a few ounces of blood, and direct an abstemious diet, at the same time keeping the bowels relaxed by aperients.

Pruritus, or an itching of the pudenda, as I have before stated, is a common symptom in pregnancy. The most effectual remedy is the abstraction of blood from the part, by the application of eight or ten leeches, and when they fall off the bleeding should be encouraged by using a sponge and warm water. The mucous membrane of the vagina is inflamed and turgid with blood, and hence the relief afforded by topical bleeding. I have now given you some account of the most important diseases of parts more or less intimately connected with the uterine system which occur during pregnancy. I shall next proceed to

notice the diseases, or preternatural circumstances, to which the uterus itself is liable during this state.

Section VI. *Retroversio Uteri.*

When retroversion of the uterus takes place, it is in general between the third and fourth month of pregnancy. In the year 1754, Dr. William Hunter was in the following manner first made acquainted with its occurrence. A poor woman in London, about four months advanced in pregnancy, was suddenly seized with retention of urine. She sent for Mr. Walter Wall, a medical practitioner, who passed the catheter, and relieved her; but the impediment continued, and it being again necessary to employ the catheter, Mr. Wall on this occasion made an attentive examination, with a view to discover the nature of the obstruction. He passed his finger up the vagina, the course of which, instead of being upwards and backwards towards the sacrum, was upwards and forwards against the pubes. He could not feel the cervix uteri, but he discovered a tumour at the posterior part of the vagina, which, on the introduction of the finger into the rectum, was found to be betwen this gut and the vagina. The lower portion of this tumour being projected towards the pubes, the impediment to the evacuation of the bladder was supposed to be occasioned by its pressure on the urethra. Retroversion of the uterus had been already spoken of on the Continent; the cervix uteri was described as being thrown forward against the pubes, and the fundus to have fallen into the hollow of the sacrum. Mr. Wall finding that the case of his patient corre-

sponded with this description*, endeavoured to replace the uterus, but without success. He then sent for Dr. William Hunter, who, upon examination, found the relative state of the parts to be that which has just been described. On raising the tumour, the urine dribbled away; Dr. Hunter attempted to restore the uterus to its natural situation, but failed; there was obstinate constipation, and in a few days the patient died. On examination after death, the bladder was found distended, the cervix uteri was turned upwards and forwards against the symphysis pubis, and the fundus had fallen downwards and backwards into the hollow of the sacrum; where it was so impacted as to be with difficulty dislodged. This case being the first of the kind which had been noticed in this country, excited great interest. Dr. Hunter gave a public lecture on the occasion over the body of the patient, in which he recommended puncturing the membranes in order to procure abortion—a project which has never, happily, been carried into effect. Another case of a similar kind occurred shortly afterwards; the patient could neither pass urine nor fæces. Attempts were made to empty the bladder by means of the catheter, but without success: it was proposed to puncture the bladder above the pubes: the patient would not submit to this operation. At length she felt something burst, which proved to be the bladder, and in a few hours after-

* This complaint was first described by Mons. Grégoire in his medical lectures, given at Paris in 1746. Mr. Wall was one of six English students who attended these lectures, and the circumstance seems to have escaped the recollection of them all, until it was revived by the present case.

wards she died. The displacement of the uterus was found, after death, to be similar to that just described. Retroversio uteri may terminate fatally by one of three modes; either by irritation, by inflammation, or by sloughing of the bladder. In the first case of this kind which I ever saw, death was produced by inflammation. The patient was in the fourth month of pregnancy. She had been suffering from retention both of urine and fæces nine days, and her abdomen was immensely distended. The village apothecary had been giving her nitrous æther, as a diuretic. I introduced the catheter, by keeping the point close against the pubes, and drew off several quarts of urine, with which were mixed puriform and bloody streaks. She suffered great pain in the region of the bladder, accompanied with the usual symptoms attendant on inflammation; but, in spite of bleeding and purgatives, she died. On examination, the uterus was found to participate in the inflammation of the bladder; it was still retroverted, though labour pains came on, and she miscarried soon after the urine was drawn off. It is generally believed that the uterus will regain its proper place when relieved of its contents: in this case it was otherwise, the fundus being found after death below the promontory of the sacrum.

The practical lesson inculcated by these facts is this: if you are called to a woman at about the third or fourth month of pregnancy, suffering under retention of urine, you must make an examination; and if you find the course of the vagina to be upwards and forwards, instead of upwards and backwards, with a tumour at its posterior part pressing on the rectum, you may conclude that the retention of urine is pro-

duced by a retroversion of the uterus. The state which predisposes to retroversio uteri is thought to be a pelvis of too great capacity; and the cause which sometimes immediately produces it, is a distended bladder, the neck of which rising up behind the symphysis pubis, the connected cervix uteri is dragged up along with it, and the fundus falls down into the hollow of the sacrum.

In the treatment of this complaint there are three principal objects: the first is, to restore the displaced uterus, if possible, to its proper position: if this should not be practicable, the second is, to keep the bladder free from distention, by the use of the catheter, as often, and for as long a period, as may be requisite; the third is, to guard against inflammation of the bladder or contiguous parts by an antiphlogistic regimen and treatment. Before any attempt is made to restore the uterus to its place, the bladder should be emptied by the catheter *, and the rectum by an injection;

* On all occasions the catheter should be introduced under the clothes of the patient, by which an exposure, which is rarely necessary, will be avoided. It is directed to introduce the catheter by first placing the patient on her back, with her knees drawn up and bent; but this position is neither a delicate nor a convenient one. The woman should be placed on her left side, as at the time of labour, and her hips should be brought rather over the edge of the bed; the fore-finger of the left hand is to be introduced within the vagina, and the point of it is to be slowly drawn in a direct line under the arch of the pubes out of the vagina, and towards the clitoris; just as the point of the finger is drawn out of the vagina, by a careful examination a fleshy eminence will be distinguished, which, being pressed, will give the sensation of the fleshy margin of a small orifice. Supposing the orifice of the urethra to be thus felt, as it must, if the point of the finger is

then place the patient on her hands and knees, introduce the finger into the rectum, and make pressure *against the fundus uteri*. The uterus is sometimes so low that your finger passes beyond it; an ill directed pressure from the rectum may force it down still lower; therefore first push it upwards by your finger in the vagina, and then endeavour to complete the reduction by pressure on the uterus from the rectum, not directly upwards, to which the promontory of the sacrum will be an obstacle, but rather to either side, or towards either sacro-iliac symphysis where there is the greatest space, and then upwards. The degree of pressure employed may be pretty considerable,

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drawn slowly and carefully from the vagina under the arch of the pubes towards the clitoris, the catheter is to be passed with the right hand along the fore-finger of the left, which still presses upon the orifice of the urethra, and by which the point of the catheter will be conducted into the urethra. The instrument is then to be passed into the bladder at which it soon arrives; and that the catheter is passing through the urethra may be ascertained by feeling it, with the fore-finger of the left hand, *through* the vagina, and not *in* the vagina. The female urethra is in general considerably shorter than the female catheter; but in retroversio uteri the neck of the bladder is projected upwards, by which the urethra is elongated: in this case the female catheter will sometimes scarcely enter the bladder, and a patient has been left, after an introduction of the short catheter under these circumstances, with a bladder still enormously distended by urine. In a case of this kind, if the urine does not flow freely on the introduction of the female catheter, it is best to introduce a flexible male catheter, by which the bladder will certainly be emptied. The urine, as it flows, may be received in a basin under the clothes, and when this is full, the orifice of the catheter is to be closed by the finger till this basin is emptied or another is provided.

and it may be continued for ten minutes: if the uterus is once felt to move from its preternatural position, it rises easily into its proper place. We will, however, suppose that an adequate pressure has been made for a sufficient length of time, but without success; it will then be necessary, in order to prevent distention of the bladder, to draw of the urine with a catheter three times in every twenty-four hours. Thus you obviate the principal danger; and as pregnancy advances, the uterus will rise spontaneously out of the pelvis, in this way accomplishing a natural cure. In addition to the regular employment of the catheter during the state of retroversion of the uterus, the bowels, which, from the pressure of the uterus, would otherwise suffer from accumulation of fæces, must be kept constantly relieved by gentle laxatives. The diet should be light, and not stimulating; and the recumbent position should be preserved, until the uterus has resumed its natural place.

The uterus, when reduced by pressure, frequently again becomes retroverted. It must be again replaced, and a sponge pessary must be introduced, which will effectually prevent a similar occurrence. The uterus, in the unimpregnated state, may become retroverted, perhaps two or three days after delivery, or even in a woman who has never been pregnant. When the uterus is enlarged by disease, it is also liable to this displacement, attended by its usual consequences. I was lately requested, by a young practitioner, to see a woman who had been delivered three days; he said she had retroversion of the uterus. I thought he meant an inversion, but on examination I found his designation to be correct. My finger passed upwards

and forwards; there was a tumour at the back of the vagina, between it and the rectum; she had retention of urine, and a difficulty in passing the fæces, together with pain in the pelvis. This, I said, will have a natural cure; the uterus will be daily getting smaller; therefore take care of the bladder, and let the uterus take care of itself. The urine was regularly evacuated by the introduction of the catheter twice or three times a day; in about a week all the symptoms vanished, and on introducing my finger into the vagina, no vestige of the complaint could be discovered. I was consulted by an elderly woman, past the period of child-bearing, who had bearing down, with pain in the pelvis, and great difficulty in passing urine and fæces. I examined per vaginam; my finger passed upwards and forwards. There was a tumour at the back of the vagina, between it and the rectum. I placed her on her hands and knees, and readily pushed up the tumour from the rectum.

The treatment of this complaint is the same in all cases; and may be thus summed up. Reduce the retroverted uterus if practicable; if you fail in this attempt, draw off the urine twice or three times in every twenty-four hours; apply leeches to the lower part of the abdomen if any degree of inflammation is indicated by tenderness on pressure; keep the bowels regularly evacuated by castor oil; direct a light, unstimulating diet, together with the recumbent posture. This disease when first known was fatal; but now if you are called in early to a case of this description, the death of the patient will perhaps also be the death of your reputation.

Section VII. *On Abortion.*

The natural period of pregnancy is nine calendar months; but many causes may excite the uterus to a premature expulsion of the ovum. Writers make a distinction between abortion and premature labour. If the expulsion of the ovum occurs before the sixth month, it is called abortion; if afterwards, premature labour: but this is an arbitrary distinction, for the process in both instances is analogous. The symptoms which precede abortion are pains, going and coming, in the region of the uterus, together with a discharge, per vaginam, of coagulable blood. When a woman is about to miscarry, she knows it by these signs. Sometimes the irritation of the uterus is communicated to the neighbouring organs, and there is a desire to void urine and fæces, although the bladder and rectum may be empty. At other times there is great irritation of the nervous system, indicated by hysterical affection. But the discharge of coagulable blood, attended by a sense of weight in the pelvis, with intermitting pains, are the only symptoms to be relied on; and after these have continued for a period which varies considerably in different cases the ovum is expelled, and the pains and discharge cease. But these symptoms may cease suddenly, while the ovum is expelled from the uterus only into the vagina: here it may remain harmless and unirritating, until an attempt perhaps is made to evacuate the bowels when the ovum is expelled also from the vagina; and hence it is not unfrequently discovered in the close stool. At an early period after conception, the ovum generally comes away

entire, and on immersing it in water, its external appearance is shaggy. But at a more advanced period of pregnancy, the membranes burst, and the liquor amnii and fœtus alone are expelled; the placenta is left behind, and some days may elapse before it comes away. Sometimes the ovum escapes in a clot of blood, and being overlooked, it becomes a question whether or not abortion has occurred. Every clot of blood should therefore be inspected. On an examination of the ovum, the fœtus will be found suspended in it by the umbilical cord; there are instances, however, in which it has appeared to be a mere bag, in which no fœtus could be discovered. Dr. Hunter explained this anomaly, by supposing that the fœtus had perished, and was dissolved or absorbed: this is a mere conjecture, to which may be opposed the equally probable one, that an ovum may be produced which never contained a fœtus.

The causes of abortion are very numerous; they may however be arranged generally under these three divisions. First, those which, stimulating the muscular fibres of the uterus, excite their contraction, and the fœtus is expelled. Second, those which produce a separation, partial or complete, of the ovum from the uterus, in consequence of which the fœtus may die: it then excites the uterus to an expulsive action, as an extraneous body. Third, those, the primary action of which is on the fœtus, such as powerful mental emotions, by which, as by a sudden shock, its death is occasioned: it is then also expelled as a foreign body. Thus abortion may be produced by the excitement of the muscular fibres of the uterus; by the separation of the ovum, or by the death of the

fœtus. The discrimination, however, of these modes respectively is not easy in all cases. Irritation in the neighbouring parts may occasion abortion, as that produced by a calculus in the bladder, or by accumulation of fæces in the bowels. Abortion may also ensue from falls or local injuries, from fright or violent passion. There is a kind of revelling at Norwich, in the celebration of which a man is dressed up fantastically, and something resembling the head of an alligator, with hideous jaws, is placed on his shoulders. This hero with the alligator's jaws is, from the action attempted by them, appropriately called "Jack Snap." A pregnant lady happened to be going through the market, without being prepared for such a spectacle; she saw this thing peeping over her shoulder. She was struck with terror and fainted, was carried home, and almost immediately miscarried. In this case, the sudden alarm which she experienced caused the muscular fibres of the uterus to contract, and the ovum was in consequence expelled. There is no doubt that passions and emotions of the mind sometimes destroy the child; but how an influence of this kind is communicated from the brain of the mother through the umbilical cord to the child, is not easily determined. Some miles from London lived the daughter of a gardener, who was seduced by an officer of dragoons. They lived for some time together as man and wife, and she became pregnant. At length he fell in love with a female of his own rank, and married her. When this circumstance became known to the gardener's daughter, her affliction was extreme. She spent the day in tears and hysterical paroxysms; and from the moment at which she first

received the intelligence, she never felt the child move. She had the sensation of a cold heavy lump in the region of the uterus, and the breasts suddenly became flaccid. Three weeks afterwards pain came on, accompanied with a discharge from the vagina. I was requested to see her, when I learnt the above particulars. A dead child was expelled. Such examples are very numerous. Abortion in other instances cannot be traced to any external obvious cause. At a certain period of pregnancy women will sometimes miscarry in spite of your best endeavours to prevent it. There are two classes of females particularly disposed to spontaneous abortion —the nervous, and the plethoric. Abortion is supposed to arise in nervous women from a participation of the uterus in the susceptibility incident to this temperament, by which it is liable to be easily excited to an expulsion of its contents.

In women of a plethoric habit the vessels of the uterus may be ruptured from over distention, and abortion follows. Thus it is said in the one class abortion is produced by nervous irritation of the uterus, and in the other by fulness, and consequent rupture of some of its blood vessels. But I think it generally commences with the death of the fœtus. I attended a lady of a very pale complexion, who, at a certain period of pregnancy, had miscarried repeatedly. Soon after my arrival the ovum was expelled. It had the appearance of having been dead several weeks; the fœtus was quite brown and fetid, and the placenta was covered with tubercles. This morbid state of the placenta had no doubt caused the death of the fœtus. Another case occurred in which

the fœtus died at about the third month after conception; yet it was not expelled from the uterus until the end of the full period of gestation. This happened to the same patient twice, and each time the placenta, called in this state by Mauriceau "scirrhous," was hard and almost cartilaginous.

There are three different stages in cases of this description, at which our advice or assistance may be required. First, we may be called upon to prevent abortion, when it is merely apprehended; secondly, to prevent it when the process has already commenced; and, thirdly, to conduct the patient safely through it when its occurrence is inevitable.

The means which are the most likely to prevent the spontaneous abortion incident to women of a nervous temperament, are those by which the health of such may be improved under any other circumstances. These will consist chiefly of tonic medicines, pure air, nutritious but unstimulating diet, and the cold bath. Mr. White of Manchester gives dilute sulphuric acid three times a day, and directs the use of the tepid bath, at about 86 degrees, every second morning, on an empty stomach. The latter, though in some sort an empirical recommendation, is one worthy of considerable reliance. The best plan, though this is not always successful, is to separate those women from their husbands who are accustomed to spontaneous abortion before conception has taken place, by sending them to the sea side, where their constitutions may be invigorated by cold bathing. If their health is good at the time of conception they will, perhaps, have a living child at the end of the customary period of gestation; but if the health is bad at this time, abortion will ensue under the best management. If conception succeeds

to a course of sea bathing, the use of the cold bath may be continued with advantage at proper intervals, during the whole period of pregnancy.

We have now to speak of spontaneous abortion in women of an opposite state of the system,—in those of a plethoric habit, who have red cheeks and a full pulse. Here the general object of treatment is to keep the circulation low and tranquil; a few ounces of blood should be taken from the arm at each of the three first menstrual periods after conception: the bowels should be kept relaxed, the diet should consist of vegetables, with abstinence from fermented liquors, and none but the most gentle exercise should be permitted. A lady of plethoric habit, who had been accustomed to miscarry, and had tried without success the usual remedies, together with absolute rest, in her next pregnancy consulted me. I prescribed the same treatment, but directed her to take gentle and regular exercise daily on a pony, at only a walking pace. The irritability of the system subsided, and she has since had three or four living children.

When a woman has miscarried several times about the same period, the fœtus being expelled about three weeks after its death, a mild mercurial course, consisting of a grain of calomel with five grains of the extract of hyoscyamus every night, may have the effect of changing the unhealthy action of the uterine system. The operation of this medicine will require to be watched, and it will be the more beneficial if carried so far as to produce some tenderness of the gums, when it should be discontinued; and regular evacuations should afterwards be produced from the bowels by means of castor oil, or some mild aperient.

Those women who menstruate with difficulty and pain seldom conceive, and if they do, they generally miscarry. When speaking of dysmenorrhœa I stated that this complaint occurred in two varieties of constitution, and that two empirical modes of treatment were proposed for its relief or cure. One was said to consist in a mild mercurial course, as a grain of calomel every night, with hemlock, opium, or hyoscyamus; and the other in the exhibition of camphor, in ten grain doses, during the menstrual period, together with a drachm of the volatile tincture of guaiacum, increased to three drachms at a dose, three times a day, during the intervals of menstruation. I recur to this subject for the purpose of informing you that I have now three patients under my care, who suffer from dysmenorrhœa; one of these is a lady who has been married three years, and though anxiously desirous to have children, has never yet been pregnant. I put her under the course of treatment just mentioned with camphor and guaiacum. At the first menstrual period after this treatment was commenced, she had less pain and less discharge than formerly; at the second menstruation she had no pain, and only the customary discharge; and at the third period there was neither pain nor discharge; but now, on her getting out of bed in the morning, she feels sickness, from which you will readily infer the nature of her present malady. The other two patients are much better. In plethoric subjects the mild mercurial course is the most likely to be beneficial; the treatment by camphor and guaiacum may be prejudicial, and is suited only to women of a pale complexion, nervous irritability, and a languid circulation. I find cases of dysmenorrhœa much more manageable under these

methods of treatment, than under any with which I was formerly acquainted.

For the prevention of miscarriage the separation of the wife from her husband is an indispensable measure. I told one lady who consulted me, on this subject, that she must be separated some little time from her husband. She replied, if I could assure her that it would prevent abortion, she would submit to it; if not, it was quite out of the question.—You will not prevent abortion, although the case is otherwise well treated, as long as the husband is not separated from his wife. Frequent sexual connection alone will often excite the uterus to actions which terminate in abortion.

But supposing abortion has commenced, and on being called in, you find the patient labouring under irregular pains in the back and region of the uterus, with discharge of coagulable blood; here you can do but little to prevent the expulsion of the ovum. I believe the child is then in general dead, and must be expelled. You may sometimes, however, succeed in this object; and as there is a chance of success, you must attempt it. You have two principal points of attention. First, tranquillise the uterus by opium. Second, keep the circulation low and quiet, by abstinence, together with perfect rest in the recumbent position, and if there is vascular fulness, by bleeding. I enquire if there is pain; if there is, I give opium; if the pulse is full, strong, and hard, with a hot skin, I bleed and give nitre, which seems to have the effect of diminishing the action of the heart and arteries; I direct the patient to remain in bed, to be kept cool, and to take no warm fluids. The best method of giving nitre in these cases, is in ten or fifteen grain

doses every five or six hours. The nitre should be plunged into a glass containing about three ounces of cold water, and immediately swallowed, that its solution may, if possible, take place in the stomach. Some practitioners when called to a woman threatened with a miscarriage make a regular practice of bleeding the patient; but when the pulse is neither rapid nor full, this measure is superfluous, and may be prejudicial: it is sufficient to keep the patient cool, to give nitre, to direct a low cool diet, and perfect rest in the recumbent posture.* These remedies are all calculated to restrain hæmorrhage; when this is moderate, take care of the uterus, and let the discharge take care of itself. But if the hæmorrhage is profuse, and the patient becomes faint, pallid, and breathless, I reverse the rule, and prefer attending to the hæmorrhage and allowing the uterus to take care of itself. The chief object, when abortion becomes inevitable, is so to conduct the patient through it that the constitution may not suffer from too profuse a hæmorrhage. When the ovum is expelled, all pain and hæmorrhage will cease. If on examination you feel a portion of the ovum protruding through the os tincæ, you may pass your finger up by the side of it, which will stimulate

* To these recommendations it may be added, that small doses of epsom salts in infusion of roses, such as two drachms given every six or eight hours, and diminished according to their operation upon the bowels, will sometimes prove extremely beneficial in cases of this description; so much so, that a discharge, threatening miscarriage, which had continued for a week or ten days, under a treatment which comprised no attention to the bowels, has been known to cease totally in a day or two after this treatment has been commenced, and the woman has afterwards gone her full time.

the uterus to contract, and thereby you may hasten its expulsion. But if you cannot feel the ovum, you must on no account leave a patient who has both pains and hæmorrhage, for the latter may proceed usque ad mortem.

The best mode of restraining the hemorrhage is either to place a lump of ice in the vagina, or else to plug the vagina with lint, or a large sponge dipped in vinegar. I use the plug of lint or sponge, a considerable bulk of which will be required to fill the vagina, which must be done so completely that the escape of blood is mechanically prevented. The result of plugging the vagina in this case is not the same as at the full period of utero-gestation, when the quantity of blood poured into the uterus itself may be sufficient to kill the patient. At the period of abortion the uterus can contain but little: you suppress the hæmorrhage; the contraction of the uterus continues gradually to expel the ovum behind the plug; and when its expulsion is thus far completed, the pain ceases, and the plug, fœtus, and placenta, readily come away.

If on the expulsion of the fœtus the placenta is left behind, the discharge will speedily become fætid, and there may, perhaps, ensue considerable constitutional irritation. This state is best treated by giving epsom salts in infusion of roses, with the addition at each dose of twelve or fifteen drops of diluted sulphuric acid. In cases of abortion, when the placenta does not immediately follow the birth of the fœtus, the uterus may sometimes be excited to a contraction, by which it will be expelled, by the stimulation of the finger introduced within the os tincæ. The texture of

the placenta is at this period very weak, and it is therefore difficult to obtain a firm hold of it. I attended a case in which the membranes and placenta remained ten days after the expulsion of the fœtus, producing considerable irritation. I examined and found the membranes partly protruding through the os tincæ. I attempted to extract them with my finger and thumb, but could not; I then took a pair of nasal polypus forceps and introduced them with care, and grasping the projecting portion, was enabled to extract the whole. This instrument has the proper curve, and it may probably be as useful in other cases, as I found it in this.

LECTURE THE THIRD.

ON LABOUR.

Section I. *Natural Labour.*

At the end of nine calendar months from the time of conception, the natural period of pregnancy is accomplished. How are you to calculate, so as to give an opinion when labour may be expected to commence? A woman may menstruate at the accustomed period, but on the next return of that period, no menstrual discharge appears. The precise time of conception, however, remains to be discriminated: it may have been soon after the last menstrual period, or a fortnight afterwards, or even only twenty-four hours before the expected return of the menses. This latter has been known to be the case, when sol-

diers or sailors have returned, after a long absence, to their wives only a day or two before the menstrual period.

In general, impregnation takes place a day or two after the last menstrual period. If you calculate on this supposition you will most commonly be right. I ask the patient, When she was last unwell? how long the discharge continued? and from the day after its termination, I reckon nine calendar months; thus a lady tells me, she was taken unwell on the 17th of June, and continued so four days; I add one more, and from this day, being the 22d of June, I reckon nine calendar months, and conclude that she will fall in labour on the 22d of March, in the following year; and in a large majority of cases I am right. But the occurrence of conception immediately, or very soon after menstruation, though frequent, is liable to many exceptions. Some practitioners reckon from the middle period between the last menstruation and the one that should next ensue, alleging that if conception did not take place immediately after the last menstruation, the patient, by reckoning from this time, will be kept in a state of unpleasant suspense. Neither mode of reckoning is infallible; for, in the first place, the time of conception can rarely be known with precision; and, in the second, the period of pregnancy is not absolutely certain, it may in some women be more, in others less than nine months; and the same irregularity occurs in brutes, as in the cow, mare, &c. where the time of conception is known and registered with the greatest accuracy. You may give your opinion, if it is requested, that labour will take place at the end of nine calendar months from the day

after the last menstruation; but qualify this opinion by saying that it may be a week or ten days later.

A few hours, though sometimes several days, before labour commences, the belly sinks, the stays become loose, and the woman feels light and airy; and as there has been no discharge to explain this diminution, it must be from the sinking of the uterus lower into the pelvis. The motions and weight of the child are also felt to be lower than formerly. If you introduce your finger into the vagina you will feel the cervix uteri nearer to the external orifice than it is before this subsidence takes place. At this time also there is tenesmus, and micturition is unusually frequent. The symptoms of the commencement of labour are pains in the back and loins extending down the front of the thighs; these at first continue but a few seconds, and recur every fifteen or twenty minutes: the patient rarely expresses the pain at this period by exclamation: but if you notice her countenance you can easily tell when the pain is on. If she is working or reading, she lays her work or book aside, screws up her mouth, lays hold of the chair, and there is a general appearance of uneasiness, but as soon as the pain is gone she resumes her work, or takes up her book, and speaks just as if nothing had happened. Pains of this kind continue for a time which is irregular, in the different instances; but at length they affect the os uteri, which, if examined during a pain, will be found open, perhaps, of the size of a shilling, or more, giving the sensation of being pressed against; but when the pain is off you find the os uteri relaxed, soft, and yielding, and the unresisting membranes are felt behind it. As the labour

proceeds, the pains recur more frequently, and are of longer duration; the membranes, distended with the liquor amnii begin to descend through the os uteri, and by the vis à tergo, they protrude farther and farther, the os uteri becoming proportionally dilated. In some cases the membranes descend so far, as almost to protrude through the external orifice of the vagina; presently a strong pain comes on, crack go the membranes, the liquor amnii escapes with a gush, deluging the bed; there is now a longer interval between the pains, and on introducing your finger you discover a great change. Instead of a soft tumour, you feel a large, round, and hard substance, which you immediately recognise to be the head of the child. Again the pains recur, the patient becomes boisterous, expressing her pain in a very audible manner; she lays hold of a towel which is commonly fastened to the bed-post for this purpose, and bears down with all her might; her pulse now is rapid, and her skin hot: the expulsive process still goes on; the pains are more frequent, stronger, and more lasting; a degree of impatience is now manifest; the head of the child descends lower and lower into the vagina, till it presses firmly on the perinæum. In this stage of the labour, a young practitioner would think that a few pains would expel the child, but though the head rests on the perinæum, and presents at the external orifice, yet it may be some hours before it is expelled, more especially if it is the first labour: but if the second or third, half a dozen pains will generally be sufficient to complete it. In first labours this stage is often tantalising and deceptive; a pain comes on, the head is propelled forward, and distends the perinæum;

the pain subsides, and the head recedes. In this manner the labour may continue for several hours, without making any very apparent advance; through this period the expansion of the perinæum, which is necessary to the completion of the labour, is still going on. On examination you will perceive that the perinæum has by degrees become thinner and thinner, the external orifice of the vagina more relaxed and yielding; at last comes a more effectual pain, the head advances, the external orifice is widely expanded, and in the twinkling of an eye, pop comes the head of the child into the world. There is usually now a longer interval of pain; the face of the child at its birth is almost invariably towards the sacrum, and the occiput to the pubes of the mother. You will find, during the expulsion of the body, the face turn towards the right or upper thigh of the mother, and the occiput to the left or lower thigh: this is generally the case; and it is so for the reason that the shoulders being the widest part of the body are made to occupy the greatest width of the inferior aperture of the pelvis, which is from sacrum to pubes. On the expulsion of the head, one strong pain is sufficient for that of the body of the child. On applying your hand to the abdomen of the mother, you will now find that it has undergone a considerable change; instead of its being distended, hard, and resisting, it is flaccid, soft, and yielding; and through its relaxed parietes you can feel, just above the symphysis pubis, a hard round ball, a little larger than your fist, which is the uterus contracted from an immense sac into this small compass.

The child being born, there is a remission of pain, and the woman feels rejoiced at the sudden transition

from severe suffering to comparative ease. In about ten minutes the woman again feels pains, less violent than before, in the region of the uterus, coming and going about every five minutes: on examining, you will find a quantity of coagulated blood expelled, and on passing up your finger along the umbilical cord, you will discover the placenta forced into the upper part of the vagina, where, from the horizontal position of the patient, it may remain some time, if not removed by the accoucheur. The placenta being taken away, the labour is then over. These are the external and obvious changes which occur during the progress of labour. Some other important particulars are to be next spoken of; such as the power by which the child is expelled from the uterus; the process by which the os uteri is dilated; the manner in which the child passes through the pelvis, which is a short, curved, irregular, and bony canal of different dimensions in different parts; and the process by which the placenta is detached and expelled from the uterus. These are no speculative problems: in the varied forms of difficult labour, you will sometimes find that you have to act as a substitute for Nature, her own powers being inadequate; when the knowledge of all these particulars will be necessary to your success.

The power which expels the child resides chiefly in the uterus itself *, which is aided in this operation by

* Anatomists agree in the fact that the uterus possesses a muscular structure, which is manifest only towards the latter period of utero-gestation; they are not, however, agreed upon the precise arrangement of its muscular fibres.

See a paper on the Muscularity of the Uterus by Mr. Charles Bell, Med. Chirurg. Trans. vol. iv. p. 335.

the diaphragm and abdominal muscles. During a pain the muscular fibres of the uterus contract, compressing its contents against the orifice of the uterus, which does not itself contract, but, on the contrary, becomes dilated. That this is the mode of the delivery of the child is proved by many facts. The alternatives are either that the child escapes by its own efforts, or that it is expelled by the uterus: it cannot be by the former mode, for a dead child is born as easily as a living one, or perhaps more so. In the case also of a lacerated uterus, the child does not advance through the natural passage, but recedes from it, and escapes into the bag of the peritoneum. That the expulsive power resides chiefly in the uterus itself, the sense of touch is alone sufficient to prove; for if we introduce our hand into its cavity, in the absence of a pain, it is felt to be soft and flaccid; but upon the recurrence of a pain, the hand is so firmly grasped by the contraction of the uterus as to be sometimes benumbed, and we are glad to withdraw it: the pain ceasing, the uterus is again soft. One might think this evidence sufficient; but that of sight also has been thought necessary to confirm the supposition of a process, which few people would be inclined to doubt. A Frenchman performed some experiments on dogs, of which he ought to have been ashamed. The object of these experiments was to ascertain whether vomiting was owing to the action of the stomach itself, or to that of the diaphragm and abdominal muscles. He laid open the abdomen of a dog, and cut away the stomach, substituting for it a bladder, which was attached to the œsophagus above, and to the pylorus below: he injected a coloured fluid

into the bladder, and an emetic medicine into a vein; which latter produced the customary action of vomiting, by which the coloured fluid from the bladder was ejected through the œsophagus. At the same time, experiments were made on bitches when in the act of bringing forth their young, by which ocular demonstration was obtained that the uterus expelled its contents chiefly by its own contractile powers. The diaphragm and abdominal muscles render considerable aid to the uterus in this expulsive function; so that if you make a woman bear down, as it is termed, during a pain, by which these auxiliary powers are called into action, the effect of the pain will be considerably increased.

The os uteri is dilated both by the action of the fibres of the uterus, by which it is drawn open, and upwards, and by the pressure of the contents of the uterus, which are forced against it by a contraction on all sides; by this pressure the membranes, distended with the liquor amnii, are made to protrude, in the form of an egg, further and further, with an increasing dilatation of the os uteri at each pain. It seems as if the fundus uteri were a fixed point, and all the fibres of the uterus contracted from the os tincæ to that part, thus drawing the os uteri open and upwards, and at the same time compressing its contents, and forcing them, like a wedge, through the os uteri, which is thereby dilated. The rapidity and ease of the dilatation of the os uteri depend upon its own dilatability, and the force exerted to overcome its natural state of contraction. Practitioners often, when the process of dilatation is slow, conclude that the os uteri is rigid: this is sometimes the case; but every os uteri which

dilates slowly is not a rigid one, of which the touch will afford sufficient proof. The slowness of this process most frequently arises from the weakness or irregular action of the dilating powers, or else from the escape of the liquor amnii by a premature rupture of the membranes. The dilatation of the os uteri may be said generally to depend upon the contraction of the uterine parietes, and upon the protrusion of their contents.

How does the child pass through the pelvis, the dimensions of which are so irregular? By the most simple contrivance in the world. Leave the body of the child out of the question, it is, How does the head get through? and the problem is answered; for where this passes, the body easily follows.

The pelvis is a bony canal, the superior and inferior apertures of which are both oval, but in opposite directions. Thus, if you measure the *superior* aperture of a full sized female pelvis from ilium to ilium, you will find it to be five inches and a half; from pubes to sacrum, four inches and a half; diagonally, five inches and a half. If you measure the *inferior* aperture, from ischium to ischium, it will be found to be four inches and a half, from pubes to sacrum five inches and a half; thus the greatest space in the *superior aperture* is from side to side; in the *inferior* from pubes to sacrum. If you measure from the arch of the pubes to the coccyx, you will find the distance to be the same as from pubes to sacrum above; but in labour the os coccygis yields, being forced backwards about an inch, thereby making this, in the inferior aperture, the widest diameter. The depth of the pelvis varies at different parts of its circumfer-

ence: in front, from the brim, or superior margin, to the inferior margin, it is an inch and a half; at the sides, about four inches; and at the back part, six inches: so that it is a short canal, oval above from side to side, below, from before, backwards. These irregularities in the dimensions of the pelvis render the passage through it a curved one; each aperture, therefore, has a different axis; that of the superior aperture is downwards and backwards, that of the inferior downwards and forwards. The pelvis being thus formed, in what manner does the head of the child pass through it? The shape of the head is oval; its longest diameter is from the forehead to the occiput, its shortest from side to side, and its course through the pelvis must be conformable with these dimensions. At the commencement of labour, the head descends through the superior aperture of the pelvis with the occiput towards one ilium, and the face towards the other. In this stage, the head in its longest dimension passes through the widest diameter of the pelvis; and for the purpose of a similar adaptation, the face afterwards turns into the hollow of the sacrum, and the occiput to the pubes. Thus the descent of the head, corresponding with the apertures of the pelvis, and also with its axes, is first downwards and backwards through the superior aperture, and then downwards and forwards through the inferior aperture, the occiput in this latter stage being turned under the arch of the pubes, and the face towards the sacrum.

On being called to a patient, the first point to be ascertained is whether or not she is in labour; the second, whether the presentation is a natural one. These two particulars being known, it is next an

object to keep up the spirits and confidence of your patient during the labour, however tedious it may prove. The perinæum should be protected when in danger of laceration from the passage of the head through the external orifice of the vagina. The child being born, it remains only to tie and cut the funis, and to extract the placenta when it is separated from the uterus.

It is of importance to all parties to decide correctly in the first instance whether or not your patient is in labour. She may have pains, which, in situation, continuance, and recurrence, so much resemble those of labour, that though in reality of a different kind, a woman who has had many children may not be able to distinguish them. These are called *false or spurious pains.* They may come on several weeks previously to actual labour, and may continue irregularly until that period, and are exceedingly troublesome. These are pains in the back and bowels, passing round to the loins, and they descend to the hips and thighs, going and coming like labour pains; during these pains there is no contraction of the uterus, and the os tincæ is not dilated by them. The nature of these spurious pains is not certainly known; I believe them myself, principally from considering their seat and course, to arise from irritation of the nerves of the uterus. Some attribute these pains to the presence of irritating matter in the intestines; in proof of which they allege that they are more effectually relieved by purgatives than by any other remedies. This fact may perhaps prove an accumulation in the bowels, but not that the pains in question are caused by this accumulation.

In order to distinguish the spurious from the true labour pains, it is necessary to ascertain whether they are attended with a contraction of the uterus, and whether there is any dilatation of the os tincæ. This information is obtained by an external examination of the abdomen, and by an examination per vaginam. First, place your hand on the abdomen of the patient, and retain it there until the pain comes on; if it is a true labour pain, you will feel a large tumour, which is the uterus, contract beneath your hand: then pass your finger up the vagina to the superior and anterior part of that canal, where, during a pain, the orifice will be felt to dilate. Women have a prejudice in favour of our making an examination per vaginam during a pain; they call it "taking a pain;" and this prejudice of theirs it will be proper to respect. The nurse perhaps says, "The doctor wants to take a pain." The woman being laid on her left side, you then introduce your finger to the upper part of the vagina, apply it to the os uteri, and ascertain if, during a pain, the orifice opens, and whether the membranes, distended with the liquor amnii, become tense and protrude a little: these circumstances are characteristic of a true labour pain, and if they are remarked, you may conclude your patient to be in labour. The examination which has enabled you to decide that your patient is in labour, will afford an opportunity also of ascertaining the presentation; for which purpose, while the pain is off, and the membranes flaccid, press your finger upwards, so as to discover what is behind them, or in them; and if you feel a large, rounded, and hard substance, this is the

head of the child, and the presentation is a natural one.

I will suppose the woman not to be in labour, but suffering from false or spurious pains: the os uteri, if slightly open, as is sometimes the case, is then not affected at the time of a pain, neither do the membranes become tense. You must not, however, in this case give too hasty a prognosis; for often in first labours false pains will continue for two or three hours, and then be succeeded by true labour pains. This caution is especially applicable to first labours: in subsequent ones, if, during a pain, there is no dilatation of the os uteri, no distention of the membranes, or pressure of them against the os uteri, you may, with less hesitation, give it as your opinion that the woman is not in labour. In making your prognosis it is proper that you should ascertain whether the full period of utero-gestation is accomplished, and whether there is the subsidence of the belly which precedes actual labour. If the patient has gone her full time, and if there is the customary subsidence of the belly, whether it has been remarked for one or two days, or only for a few hours, even in a first labour, I am unwilling to believe that the pains are altogether spurious, or that they will not soon be followed by those of actual labour; but if pains come on several weeks before the full period of utero-gestation, and are accompanied with no sinking of the abdomen, then, in the absence of any of those signs before enumerated, which would prove them to be of a different description, I decide such pains to be spurious. These pains are very troublesome, and occasion much vain and anxious expectation. They

are best treated by a purgative in the first instance; as by castor oil or a black dose: and the bowels being cleared, the next object is to quiet irritation; for which purpose you may give twenty drops of the tincture of opium, and direct the patient to remain in the recumbent posture. If these spurious pains are attended with a hot skin, and a full and a rapid pulse, eight ounces of blood should first be taken from the arm, which is to be followed by the purgative and the anodyne, in the order just mentioned.

It being ascertained that the patient is actually in labour, it then becomes a matter of importance to keep up her spirits, and maintain her confidence in you until it is over. This is easily done if the labour is a short one; but if it proceeds slowly through one night—if the following day advances and still no promise of a speedy termination, the patient begins to doubt whether she has received proper assistance, and those about her look suspiciously at you: they calculate the number of hours the labour has already lasted; they wonder it is not further advanced; and you are made to feel, both by looks and hints which are sufficiently intelligible, that your competency is thought to be rather questionable. When you find yourselves in this situation, you will not think it a remarkably agreeable one. I fight this battle by three general rules. First,—If it is the first labour, I always calculate that it will be tedious; and therefore avoid, as long as I can, acknowledging my patient to be in labour; and I am never fool enough to state any time within which the labour will be over. Second,—I never stay in the room when I can with propriety get out of it. Third,—I endeavour to make my patient

pass away the time as pleasantly as possible, through a long and tedious period of severe suffering. If you allow your patient to suppose she is in labour from the very first pain, she will speedily be exhausted, both by her own efforts, and by disappointment at their utter fruitlessness. You may say that the pains she suffers are preparatory to more effectual ones, for which she must wait patiently: when these effectual ones come on, you may then concede that she is really in labour; and you may assure her that it is going on well, though the period of its continuance is yet uncertain.

If your presence in the room with the patient is not required, you had better pass as much of your time as possible in an adjoining one; for, if you are with the patient, your interference will be expected when it can do no good: but, on the contrary, superfluous examinations tend only to render the parts dry and irritable. Besides which, by being constantly present, you are rendered more familiar both with the patient and her attendants than will conduce to the preservation of the requisite confidence in you. Supposing then the stage of the labour and the nature of the pains to be such that your presence is not required, you had better amuse yourself with your own reflections in an adjoining room, by which your own mind will be kept composed and tranquil; and as often as may appear necessary you will visit your patient, ascertain how the labour proceeds, and cheer her with hopes of its favourable and speedy termination, being cautious not to commit yourself too far in the latter promise. Much may be contributed towards making the time pass cheerfully with your patient, by her having with her some agreeable friend

whose conversation may amuse her in the intervals of pain. In some cases you will require all the ingenuity and address you are master of to keep up the confidence of your patient: if you fail to do this another practitioner will be called in, and it will be said you could not deliver her. Never let another practitioner be called in during the labour, if by any means you can avoid it.

The propriety of your absenting yourself from a patient who is in labour will depend upon many circumstances, but principally upon whether or not it is a first labour. If it is a first labour, provided you can be within call, you may visit your other patients, return, ascertain the state of the labour, and perhaps go out again, &c. This you may do until the os uteri is dilated to the size of a crown piece, a process which will occupy about two thirds of the time of labour; afterwards no prudent man would leave his patient until the labour is over. But if it is not the first child, the progress of the labour is very different; the patient has slight pains recurring about every ten or fifteen minutes, just sufficient to remind her that she is in labour: the accoucheur is generally apprised of this state of things, in order that he may be in the way. On being sent for after a notice of this kind, you will find that these trifling pains have been sufficient, perhaps, completely to dilate the os uteri. The pains now become stronger, and the membranes more distended — presently they are ruptured — gush goes the liquor amnii; and if your arrival has not been pretty expeditious, you may be greeted on entering the room with the squalling of the child under the bed-clothes. If I am called to a labour which is not

the first, and find the pains regular though slight, however trifling may be the dilatation of the os uteri, I am exceedingly shy of leaving my patient. Whoever engages in the practice of midwifery, must make up his mind to spend many a useless hour in the house of his patients; for if he is absent when the child is born, they will think he ought to have been present: at all events, they are assured he has been of no service, and will grudge him his fee, or perhaps not pay it at all.

During labour, your patient will require no other nourishment than tea or gruel, for the pains tend to excite febrile irritation; she may sit on an easy chair, or walk gently about the room, until the os uteri is fully dilated. When the os uteri is fully dilated, let her go to bed; after a few pains, more severe than the former, crack go the membranes, the liquor amnii escapes, and the bald head of the child begins to descend into the vagina: the patient must now remain in bed, and you must not stir from her side. The head descending, the perinæum becomes thinner; it is forced out into a round tumour, and the head begins to protrude through the external orifice: the perinæum now requires support, lest the passage of the head should lacerate it, by continuing to descend downwards and backwards; which it would do, and come out at the coccyx, were it not opposed by the perinæum. You must in this stage diminish the pressure on the perinæum, and compel the head to descend downwards and forwards, by placing the palm of your hand, like an artificial perinæum, firmly over the natural one, and thus supporting it. When the pain is off we do nothing; but when the pain returns we must again support the perinæum firmly until it ceases: the peri-

næum requires to be supported chiefly at its thin extenuated edge, for there it first gives way. At length a more forcing pain comes: this is the critical period for an adequate support of the perinæum; its thin edge slips over the head, which is then born. The umbilical cord is not unfrequently around the neck of the child: this should be ascertained by your finger as soon as the head is born; and if found to be the case, first gently draw down the cord a little, pass the portion of it surrounding the neck over the occiput, and then down over the face: you need not fear its breaking; it will always bear a sufficient extension, or will always yield sufficiently for this purpose.

Thus far we have advanced with the labour; and a midwife, rejoiced at having something to pull at, would proceed to extract the child as fast as she could: but it is a horrible practice; for there must then be left behind a large dilated uterus. I always leave the uterus to expel the whole of the child; first the head, by the next pain the shoulders and body, and lastly the extremities. I know that this cannot be accomplished without the contraction of the uterus, which prevents those untoward accidents which sometimes attend the separation of the placenta. After the birth of the head, there is frequently a considerable interval before the recurrence of the pains requisite for expelling the other parts of the child: the renewed action of the uterus may be excited by gently rubbing or pressing the abdomen. The patient perhaps says this occasions pain; which I am happy to hear, for I know and feel that this pain is owing to the contraction of the uterus.

The child, we will suppose, is now under the bed-

clothes; the next question to be determined is, whether there is only one, or more than one child? To ascertain this, you place your hand on the abdomen of the mother: if there is another child, the belly remains as hard, and nearly as large, as before the birth of the first; but if she has not twins, the belly is sunk and soft, and just above the pubes you feel the uterus contracted into a hard tumour, about the size of the child's head. Supposing there to be only one child, we have now only to separate it from the mother, first tying and dividing the umbilical cord. Two ligatures are generally used; one is placed about three fingers' breadth from the umbilicus of the child, and the other at the same distance from this towards the mother: these are to be tied firmly, and the cord is to be divided between them with a pair of scissors. The first ligature, or that nearest the umbilicus of the child, is necessary to prevent hæmorrhage from the umbilical arteries, by which the life of the child may be in some measure endangered; the second ligature, or that on the side of the placenta, is not necessary: on the contrary, I prefer using only one, thereby allowing the placenta to empty itself of its blood, by which its bulk is reduced, and it is more easily withdrawn. In cases, however, of twins it is necessary to employ two ligatures, between which the cord is to be divided. In making the division of the cord, I now always take the liberty to see what I am doing. I once attended a lady in her confinement, and after the birth of the child, relying on the touch only, divided the cord, as I supposed, between the two ligatures; after which, the child being taken away, I sat down by my patient, waiting for the placenta to come away:

presently the nurse came, and whispered over my shoulder, "The child is bleeding!" and on inspection I found that I had divided the cord between the navel and first ligature, and nothing was left but a short stump of the cord, which I was obliged to stitch up with a needle and thread, it being too short to admit of tying. I believe, however, the bleeding would have ceased spontaneously, though it is highly improper to risk an accident of this kind. This is not the only accident which I myself have met with at the time when it was my custom to divide the cord without using my eyes for the purpose; and I have heard that other practitioners have, by a similar omission, cut off one of the child's fingers, or a part of his penis. When dividing the cord always, therefore, see what you are about: this may be done without any improper exposure of your patient, which you must avoid by first tucking the clothes around her; for the nurse will remark any such exposure, and the report of it will be spread to the prejudice of your reputation.

All anxiety with the family ceases as soon as the child is born; but mine then begins: and if the friends of the patient knew as well as I do the danger liable to attend the separation of the placenta, they would feel as I do. Of the management of the placenta I shall next speak distinctly.

Section II. *On the Management of the Placenta.*

You generally find that patients estimate their danger only by their sufferings; hence, as soon as the child is born their anxiety ceases: but if they knew

the dangers attendant on the separation of the placenta, their apprehensions for their safety would scarcely terminate so soon. An immense number of large blood-vessels are laid open on the detachment of the placenta. If the arteries of the uterus are injected in a subject who dies undelivered at about the full period of utero-gestation, you may perceive on the external surface of the uterus, at one particular part, a cluster of contorted blood-vessels, elevated and conspicuous: opposite to this portion, on the internal surface, the placenta adheres. The uterus being cut through, the placenta may be peeled away from it; when the surface to which it was attached will be seen to be thickly studded with numerous orifices of arteries, presenting the appearance of the bottom of a cullender. These are the open mouths of the largest blood-vessels of the gravid uterus, and, from their number and size, a person unacquainted with the process by which the placenta is detached would suppose that its separation must inevitably be attended by fatal hemorrhage; but this, happily, is not the case. Soon after the birth of the child a few clots of blood roll out of the vagina, accompanied with a pain indicating both the contraction of the uterus and the separation of the placenta. Nature provides against the danger of hemorrhage, by a process at once simple and effectual. The child being born, the uterus, which before its birth was an immense sac filling the belly, contracts into a hard ball, situated just above the pubes. Every portion of the uterus participates in this contraction, by which there is a general diminution both of its internal and external surfaces. By this contraction the mouths of the vessels are

closed in that part of the internal surface of the uterus to which the placenta had previously been attached: thus the danger of hæmorrhage on the separation of the placenta is averted by that contraction of the uterus by which its separation is produced. Every practitioner should have his rules for the management of the placenta clearly defined. *The separation* of the placenta should be left *to Nature:* when it is *already detached, and almost expelled by the uterus,* then you may remove it. Never attempt to bring it away before it is separated: you have no business to pull the umbilical cord till, by certain signs, it is known that the placenta is separated from the uterus. What are these signs? First, pain; second, a trifling discharge of coagulated blood; third, and most conclusive, the evidence of actually feeling with the finger, by a common examination per vaginam, not merely the termination of the cord, but the body of the placenta. If in five or ten minutes after the birth of the child the patient experiences slight pains, reminding her of those she has already suffered, and on placing your hand on the abdomen you feel the uterus contracting and hardening, by this you may be assured the uterus is acting; wait then until the uterus has made a few efforts to separate and expel the placenta: these efforts are generally attended by a moderate discharge of blood, but not always, for the membranes may entangle and retain it. Having thus waited, gently take hold of the cord, pass your finger by its side up the vagina: if you feel the body of the placenta resting on the os uteri at the top of the vagina, you know that it is separated. Wait fifteen minutes longer; you may then proceed in this manner

to extract it—take a napkin and with it grasp the cord, pass your finger up the vagina, and making a pulley of it, extract the after-birth in the direction of the upper axis of the pelvis, that is, downwards and backwards. You must bear in mind that the membranes are very thin, and easily torn; after the placenta has passed through the os tincæ, the membranes are still behind, like the tail of a comet; and as they are easily lacerated, these may be left, or a considerable portion of them, though the body of the placenta should be removed. This is prevented by turning the placenta round and round, as soon as it clears the os externum; thus converting the thin and delicate membranes behind it into the condensed form of a rope, when they will bear the extension necessary for their extraction. Before I adopted this plan I frequently got into scrapes; when after the extraction of the placenta the membranes have been left behind, I have been sent for in twelve hours to the patient, who was said by the attendants to have something coming away. On introducing my finger, I have discovered fragments of the membranes, which I have pulled away: but they should have been removed before in the manner just described. I am sometimes called by young practitioners, perhaps six or eight hours after the birth of the child, to remove what I am told is a retained placenta: on making an examination, I find this mass at the top of the vagina, admitting an easy extraction by the funis, if pulled with sufficient firmness. Lecturers, in stating that you must not pull at the umbilical cord as at a bell-rope, lest you should invert the uterus, have so intimidated beginners, that they have been afraid to use the necessary force.

When the placenta can be felt at the upper part of the vagina by a common examination, you may pull with considerable force; for the vagina being elastic, the placenta is so firmly retained that pretty much force is necessary to extract it. The danger in this case of inverting the uterus is not so great as that of separating the cord from the placenta; but it will generally bear a considerable degree of extension. Should the cord be torn from the placenta, it is an evil: we lose our guide, and are deprived of the assistance of the cord in the extraction of the placenta. Therefore, whilst extracting by the cord, place the fore-finger of your other hand at the insertion of it; and if you feel it give way, do not continue to extract by it, but pass up your hand, lay hold of the body of the placenta, and bring it away. A man must have the hand of a giant if it will not pass through the space which has just admitted the descent of the child. I wish to impress on your minds attention to the following rule: — Do not *separate* the placenta *from its attachment to the uterus*, but remove it with as little force as possible *when already separated*, and almost expelled by the action of the uterus. By acting thus, you will in most cases prevent those perilous circumstances which may attend the separation of the after-birth. But if you deviate from this rule, you hazard two principal dangers: one, the inversion of the uterus; the other, hemorrhage; either of which may terminate in death. On passing your finger up the vagina after the birth of the child, you may feel nothing but the bare cord; the placenta is then high up, and attached to the fundus uteri: if you now pull it away by force, you will leave the mouths

of the vessels of that part of the uterus open, to which the placenta was attached, and a frightful hemorrhage will ensue; or you will invert the uterus. When the uterus is contracted you cannot invert it; but if it is flaccid and flabby, it is as easily inverted as the finger of a glove; and if while in this state you extract the placenta with force, you may cause the death of the patient.

There are two circumstances which require a departure from the rule just mentioned: these are hemorrhage from the uterus, and the protracted retention of the placenta.

Hemorrhage sometimes occurs after the birth of the child, but before the delivery of the placenta: you are, perhaps, waiting for pains to separate and expel it; but instead of the placenta, blood comes away, and flows in such quantity that the patient soon begins to experience the symptoms of loss of blood; she becomes pale and faint; she has a singing in her ears, her vision is impaired, and the room appears to be going round with her: these symptoms imply great danger. In most instances there is no difficulty in detecting the hemorrhage; the profuse discharge of blood externally, as well as the symptoms produced by its loss, are sufficiently obvious. But there is one case in which the hemorrhage may not be known, the condition of the patient may be mistaken, and consequently maltreated: the case alluded to is that of *internal hemorrhage*, when the blood flows into the cavity of the uterus, and does not escape from its orifice. The constitution suffers from this hemorrhage as if an equal quantity of blood were discharged externally, and the effects are of course the same:

the blood in either instance is out of the system of the circulation, and consequently the danger is equally great. I have seen many cases of internal hemorrhage. Not long since I was requested to attend at the examination of the body of a female who had died soon after delivery; the labour appeared to have terminated favourably, and the accoucheur had left her: soon afterwards she became pale, and fainted: he was immediately sent for; but just as he arrived she expired. There was no external discharge of blood; he knew not to what so fatal a change could be imputed. As soon as we entered the bed-room to examine the body, we perceived that the abdomen was much above the level of the body, and appeared as prominent as that of a woman seven months gone with child. The uterus, on its exposure, was seen to be enormously distended; and although there was no external evidence of hemorrhage, on cutting into it we found a mass (amounting to a gallon) of coagulated blood. The hemorrhage in this case occurred after the extraction of the placenta; but it most frequently happens when this body is lodged in the os uteri and upper part of the vagina, where it acts like a plug, by which the effused blood is confined within the cavity of the uterus.

I was requested to attend a lady in her confinement who lived at a distance of twenty miles. As soon as she felt her first pain a summons was sent to me, which I obeyed with obstetrical haste. When I entered the park, I saw a man beckoning the coachman to drive faster: as we passed him he said something, which I did not understand; but the coachman, who was before going at a furious rate, drove up to

the door full gallop; the footman who let me in was looking like a ghost, and the first words he uttered were, "My mistress is dead!" When I got into the hall, I saw servants running about in the utmost confusion; up stairs, the nurse was like a mad woman; and on entering the chamber of the lady, the old medical practitioner of the family, who had been in attendance from the commencement of the labour, was unable to speak: he was holding a candle in his hand, and pointed to the bed where the lady was lying; her eyes were half open, her jaw hanging down, and the pulse was quite gone. I endeavoured to recover her by ammonia and brandy, pouring them literally down her throat; but it was of no use — she was dead. As soon as the medical attendant had recovered his faculties, I received from him the following narrative: — He had been sent for on the commencement of labour pains, and the child was soon born; when the patient, being in high health and spirits, said it was the shortest and easiest labour she ever had, and was grateful for so quick a relief from her sufferings. In about ten minutes, I will not say what more he did, he pulled the funis, blood gushed forth, and he desisted; after that there was very little external hemorrhage: but the maid observed that the face of her mistress became pale, and her breathing quick; she fainted, she recovered, looked about, talked incoherently, and again fainted; again she recovered, but only to undergo the same change; she fainted a third time, but did not recover;—for this they were waiting, doubtful whether it was a long fainting fit, or death. When the carriage arrived at the door it disturbed them: the lady had ceased to breathe three quarters of an hour before

my arrival. The placenta had not been extracted; I introduced my finger, and found it resting over the os uteri at the top of the vagina: I turned it aside, and passed my hand into the uterus, and it went up beyond the umbilicus, through an immense mass of half-coagulated blood. There was no external hemorrhage of any consequence: the catastrophe was, however, sufficiently explained by that which had taken place internally.

How do you become aware that there is hemorrhage? It is in general indicated by external discharge, as well as by the constitutional symptoms described which ensue from the loss of blood. But when the hemorrhage is internal we are deprived of the former evidence, and can then draw this conclusion only from the latter, or from the occurrence of symptoms which are produced by the loss of blood. Another evidence, not unworthy of attention, may be obtained by placing your hand on the lower part of the abdomen; when, instead of a hard, contracted ball, filling only the hypogastric region, the uterus will be felt to be soft and distended. This, in conjunction with the symptoms produced by loss of blood, constitute the signs of internal hemorrhage. From ignorance of this kind of hemorrhage, very fatal mistakes sometimes occur. A woman soon after delivery faints; there is no external discharge; the practitioner supposes it to be common syncope, and resorts to cordials to relieve her: by such means he rouses the circulation, and again the hemorrhage is renewed internally; which is like giving brandy to a person who faints from venesection, and allowing the orifice in the vein to remain open. Nothing can be more absurd than the

attempt to relieve fainting by stimulants, while the hemorrhage, on which it depends, is liable to be renewed as soon as the circulation is restored.

In cases of retention of the after-birth, its situation in the uterus, and its relative circumstances, are not always the same. It is sometimes separated, but the uterus is not contracted, and consequently the orifices of the vessels remain open. Sometimes the uterus contracts in the middle, forming what is called, from its figure, the hour-glass contraction, by which the cavity is divided into two chambers; and in the upper one, from which, perhaps, proceeds a considerable hemorrhage, is lodged the separated placenta. At other times part of the placenta is separated, and a part still attached, which is owing to a firmer adhesion of one portion of it than of another to the uterus. *A' priori*, when hemorrhage occurs, we cannot tell to which of these circumstances it is owing. When hemorrhage does take place, what are we to do? The remedies are, first, the removal of the placenta. Second, the application of pressure. Third, the application of cold. When, after the birth of the child, and before the complete separation of the placenta, hemorrhage occurs, it is almost an invariable rule with practitioners immediately to extract the placenta: this is done on the supposition that the retained placenta prevents the contraction of the uterus. There are a few men who doubt the propriety of this treatment, alleging that, as the hemorrhage is occasioned by a partial separation of the placenta, produced perhaps by pulling the funis, the advantage of laying open ten or fifteen additional orifices of blood-vessels must be very questionable. My advice on the subject

is this; supposing the child born and the placenta not come away, and blood begins to flow from the vagina, make an examination, and in many cases you will find the placenta resting on the os uteri, at the upper part of the vagina: here there can be no objection to removing it, for it is separated and partly expelled; and often when removed all hemorrhage ceases. But suppose, on passing up your finger, you cannot feel the body of the placenta; it is then still high up, and adhering to the uterus. In this case, as the first step, I should doubt the propriety of its removal. The first object here is to induce the contraction of the uterus, and the second is to remove the placenta: it is wrong to invert the process, by first removing the placenta, and then exciting the uterus to contract. If in a common examination you can feel the body of the placenta at the upper part of the vagina, remove it: but if you cannot in this way discover it, you have reason to believe that it is still attached to the fundus uteri, or elsewhere; in this case, first employ the means to produce the contraction of the uterus, and then remove the placenta. Styptics and astringents have been employed to induce contraction of the muscular fibres of the uterus; an old woman would use alum, and give vitriolic acid; but the uterus is most effectually stimulated to contract by pressure and cold. If, as soon as the child is born, you press and rub the hypogastrium, the action of the uterus will be excited, and generally, you will perceive the commencement of the contraction, by its hardening and diminishing under your hand. Should it be necessary, you may also introduce your hand into the cavity of the uterus: this is one of the most

effectual means of inducing the uterus to contract, whether before or after the detachment of the placenta. With respect to the best mode of applying pressure, it is to be remembered that the blood does not flow from the whole surface of the uterus, but from that part only to which the placenta adhered. The extent of the bleeding surface corresponds with that of the placenta which was attached to it, and is about a span in diameter; but, after the birth of the child, this surface is somewhat diminished, and may be covered with the fist, if it could be directed to the exact place with precision. Pass your hand into the uterus, and press with it against the bleeding surface, and with the open hand on the outside of the abdomen make counter-resistance to the fist on the inside: in this way you can make pressure on almost any part of the uterus. I have known the most profuse hemorrhage thus suppressed. But how are you to ascertain at what part of the uterus the placenta was attached? There are two general circumstances which will assist you, though they are not infallible. The placenta is most commonly attached to the fundus uteri; and the chances are ten to one if we compress that part, that we shall include a very considerable portion of the bleeding surface. But do not depend on this probability entirely; *observe also*, before the detachment of the placenta, which way the cord leads, whether to the front, sides, back, or fundus of the uterus. By attention to these particulars, you may generally know where the placenta is attached; and as you would place your finger on the orifice of a spouting vessel, so introduce your hand, and with your closed fist within, opposed by the other hand on the outside, compress this bleeding surface.

There are many cases in which flooding begins immediately after the birth of the child. I was requested by a lady, who was accustomed to have profuse flooding immediately after the birth of the child, to attend her at her next confinement. The membranes were ruptured before I arrived; her face was much flushed; her pulse full and rapid. What was the cause of this disturbed state of the circulation? Did it proceed from the apprehension of danger, or was it from her having taken three glasses of wine daily after dinner, and a pint of porter at supper, fearing she should want strength during her labour? Be this as it may, she fell into labour with a disturbed state of the circulation; and the child was born soon after my arrival. I secured the navel string, and gave the child to the nurse; but, being prepared for hemorrhage, I determined not to interfere with the placenta until it was separated. With one hand I used friction on the abdomen; and with the other under the clothes, felt if there was any hemorrhage. In five minutes, she said there was a quantity of something coming away, and gush came the blood from the vagina: I passed up my finger, and found the placenta separated and forced a little way into the vagina; and by a gentle extension of the cord I extracted it, when the hemorrhage immediately ceased. I now thought all flooding was over, but it soon began again; her pulse sunk, and she fainted. A short time before this case occurred, Mr. Rigby, in a conversation with me on this subject, had expressed a favourable opinion of plugging the vagina with cloths dipped in vinegar, as recommended by Le Roux, remarking, that the lives of many had been saved by it; but I feared, as the uterus is large

at this time, that blood would still flow into it, the escape of which being prevented by the plugging of the vagina, the case would merely be converted into one of internal hemorrhage. However, I determined to give this mode of treatment a trial in the present instance; and therefore called for large pieces of linen, which, being first dipped in vinegar, I pushed one by one up the vagina, almost into the uterus. The hemorrhage seemed to cease; the patient recovered from her syncope; and I again thought all danger was over. She had afterwards a few trifling pains: the belly began to swell, and again she fainted; but gradually so far recovered as to express a wish to see her husband and children before she died; and I expected she would have died: her mouth was drawn on one side, and she became convulsed. I would have given any thing for a consultation, but in these cases there is no time for it; the life of the patient depends on the man who is on the spot: he must stand to his gun, and trust to his own resources. A practitioner who is not fully competent to undertake the management of these cases of hemorrhage, can never conscientiously cross the threshold of a lying-in room. I immediately pulled away the plugs from the vagina, and introduced my hand into the uterus, through a quantity of half-coagulated blood, up to the fundus, where, inclining towards the front of the uterus, I felt something ragged projecting from the surface: to this part I applied my fist, and made counter-pressure with my hand externally. The hemorrhage ceased, and no more blood came away. In two or three minutes the uterus began to contract, and I found my hand pushed gradually lower and lower, until expelled by the complete

contraction of the uterus. I then withdrew my hand from the vagina, and the hemorrhage did not recur. A few minutes elapsed when she opened her eyes, and asked if all danger was over. I replied she was much better, and directed her to remain quiet. The effect of the stimulus of my hand, or of its pressure against the parietes of the uterus, was instantaneous; and in three days she was so much recovered that she appeared to suffer nothing from the loss of blood. The best method then at once of making pressure on the bleeding vessels, and of exciting the contraction of the uterus, is, to introduce the hand into the uterus, and applying the fist firmly to that portion of its surface over which the placenta was attached, make on the outside a counter-resistance with the other hand: this is much more effectual than friction on the abdomen, or tickling the uterus internally with your finger.

The employment of cold is very generally resorted to for the suppression of uterine hemorrhage. This remedy may be applied by means of cloths dipped in vinegar and passed into the vagina, or laid over the abdomen—by introducing ice into the vagina—by covering the abdomen with snow—by injecting cold water up the rectum, &c. Ice and snow are very good remedies; but cases of uterine hemorrhage occur in the summer as well as in winter, and there are perhaps no ice-houses at hand. The best method of applying cold is that which can be resorted to whenever it may be required, alike at all seasons of the year. Cold applied with a shock is more likely to produce a contraction of the uterus than any other mode of its employment. A case occurred to me in which hemorrhage came on soon after the expulsion

of the placenta. I covered the abdomen with ice; but the belly, then flaccid, began to be distended, and constitutional symptoms ensued from the loss of blood. I swept off all the ice from the abdomen; and the patient being, with the exception of the pubes, entirely uncovered, I took an ewer full of cold water, made still colder by the addition of two handfuls of salt, and holding it aloft over her, let it fall, cold and heavy, on the exposed abdomen. The effect was immediate; the uterus began to contract like a ball above the pubes: but soon afterwards it became flaccid again; and again this water-fall immediately induced it to contract; and the action of it was kept up until the uterus was fully contracted. Of the value of this remedy I can speak with confidence, from an experience of it in many cases. The application of cold with a shock is much more effectual in these cases than any other mode of employing it. The injection of four ounces of cold water into the uterus by means of a syringe, or elastic gum bottle, with an ivory pipe or flexible tube attached, of sufficient length, is also a good remedy in these cases of uterine hemorrhage. The pipe should be introduced into the cavity of the uterus, and the water propelled quite up to the fundus. The best methods, then, of using cold for the purpose of stimulating the uterus to contract, are first, by a shock, as when water is poured from an height upon the abdomen; and second, by the injection of water into the cavity of the uterus. Let it never be forgotten, in urgent cases of uterine hemorrhage, that the most powerful remedies are pressure and cold. Sometimes the hemorrhage is so moderate, and so readily checked, that nothing more

is required than to apply cloths dipped in vinegar or water to the abdomen; but this, in extreme cases, is by no means to be depended upon.

The removal of the placenta is, in the practice of midwifery, a matter of so much importance, that I feel it necessary to enlarge on the subject; and in so doing, I shall be guilty of some repetitions, for which I hope the design of rendering my instruction as complete as possible, will prove a sufficient apology. How will you remove the placenta? There are two modes of accomplishing its removal; one by pulling at the umbilical cord, the other by passing up the hand into the uterus; which of these is to be preferred, will depend on the situation of the placenta. If it is separated, and lying over the orifice of the uterus, and can be felt at the upper part of the vagina, there is no necessity for introducing your hand to remove it; for after a moderate time you may withdraw it by pulling the cord. But suppose the blood is rushing from the vagina, and on making an examination, the placenta is ascertained to be high up beyond the reach of the finger, you cannot then tell where it is attached, but most probably to the fundus: here if you attempt to pull it away by the cord, you might invert the uterus, or break the cord; or if you detach the placenta you might leave the uterus dilated, and the mischief you occasion may be of a fatal kind. *Never pull by the cord, when the placenta is high up.* Pass your hand through the vagina into the uterus, and place the other hand externally on the abdomen, to steady the uterus and prevent its receding. You may find the uterus in one of two different states relatively to the placenta. The uterus may be con-

tracted in the middle, forming the hour-glass contraction, and the placenta may be imprisoned in the upper chamber; or this contraction may not have occurred, and the placenta may be found adhering to a large surface of the uterus. If the placenta is retained by the hour-glass contraction, pass your fingers along the cord through the inferior portion of the uterus, and they will arrive at a round hole through which the funis passes. You cannot now feel the placenta, and the first time you meet with a case of this kind, you might mistake this opening for a laceration of the uterus, and suppose that the placenta has escaped into the cavity of the peritonæum; but the circular hole is formed by the irregular contraction of the uterus, and leads to the upper cavity, or chamber as I call it, in which the placenta is confined. This circular hole you must dilate—steady the uterus externally with one hand, and forming the fingers of the other into a cone, pass them through this orifice gently, but perseveringly. It is by pressure and perseverance, not by violence, that we pass our hand through this contracted ring into the upper chamber where we are to grasp the placenta; but let it never be forgotten, that though it is commonly said the hand is introduced into the uterus to extract the placenta, yet it is for a two-fold purpose, partly to extract the placenta, *but mainly to produce contraction of the uterus.* As soon as the hand is fairly passed through this contracted portion into the upper chamber, press with your knuckles gently against the uterus, and excite it to thrust out both your hand and placenta. Do not, as soon as you have grasped the placenta, withdraw it, and leave the upper cavity di-

lated, but compress the uterus between the hand which is within its cavity, and that which is placed on the outside of the abdomen. If it is not thus excited to contract, I make the nurse throw an ewer full of cold water on the patient's belly; and if she will not do this, I do it myself. The uterus then immediately contracts, and forces my hand and the placenta into the vagina; and withdrawing them from thence, I have accomplished two objects, namely, the contraction of the uterus, and the removal of the placenta. Some practitioners think when hemorrhage occurs before the placenta is expelled, that they have nothing to do but to claw it away; and having thus dragged it out of the uterus, that they have employed the most effectual remedy for uterine hemorrhage.

Suppose, on introducing your hand, you do not find this hour-glass contraction, but that the placenta is retained by extensive adhesions; in this case I question the propriety of its immediate removal; the placenta is still adhering in part, and the uterus is large and uncontracted. It is, I conceive, a very singular remedy in cases of hemorrhage to pluck away the adhering portion of the placenta, by which an additional number of bleeding vessels are laid open, while the uterus, being still dilated, there is nothing to restrain a proportionate increase of hemorrhage. First stimulate the uterus to contract by the introduction of the hand, by pressure, and by the application of cold. Excite the action of the uterus by the pressure of your fist against its sides or fundus. Compress the uterus where the placenta is partially separated, and you will certainly diminish the extent of the bleeding surface. If these means fail to produce

the necessary contraction, apply cold with a shock. You may sometimes succeed in the latter design, by merely immersing your hand in cold water and suddenly placing it on the abdomen. If this is insufficient, you must have recourse to a fall of water from an height on the abdomen, or to the injection of cold water into the uterus in the way before described. This is the best treatment in cases of this description: it is exceedingly unsafe to invert this order, by first extracting the placenta, and then inducing the uterus to contract. Generally, by pressing, splashing, or injecting, you will produce both the contraction of the uterus, and the expulsion of the placenta.

Cases sometimes occur in which a moderate contraction of the uterus will not prove sufficient to separate the placenta, it will then become your duty to do it; and there are two modes of accomplishing this separation. Dr. Hamilton says it is sufficient, in general, without insinuating the fingers between the edge of the placenta and uterus, to pass your hand along the cord, and on arriving at the placenta to expand your fingers to its edges; the placenta is then grasped, and by bringing your fingers together, it is pressed from the circumference to the centre, and in this way detached from the uterus. This is a very good method. The common proceeding is to insinuate the fingers between the placenta and the surface of the uterus, and thus peel it off until the whole is separated. But this, as it is usually described, is a bungling affair. The directions are, you must introduce your fingers along the cord, till you arrive at the placenta, and then pass them to the edge of the placenta, and peel it off by insinuating your fingers

between it and the uterus; but you are to recollect, that by acting thus, the hand and fingers are within the membranes of the ovum, and the young practitioner will be baffled in his attempt to get his fingers between the uterus and placenta. The best method of avoiding the membranes is to withdraw the hand to the cervix uteri, and feel for the bare uterus; pass your fingers along its surface to the placenta, when your fingers will be on the outside of the membranes, which will render the accomplishment of your object comparatively easy. Having detached the placenta, you compress the uterus and excite its action with your fist, and allow its contraction to expel both your hand and the placenta. Remember, when the hand is introduced to separate and remove the placenta, that you have two objects in view, and *if the hand, with the placenta, is withdrawn before the uterus is contracted, you only complete one half of your duty.*

Another method of treating uterine hemorrhage is the following:—Take linen cloths saturated with vinegar, and pass them up the vagina one by one, and not only fill the vagina, but also half fill the cavity of the uterus. This acts in two ways, the uterus is corked up, and the effused blood coagulates, and the stimulus of the vinegar excites the uterus to contract; this kind of plugging owes its chief efficacy to the vinegar. Mr. Rigby considers this a valuable morsel of knowledge; he thinks it by far the most effectual means of suppressing uterine hemorrhage, and he relates many well described cases in support of its efficacy, which he believes would have terminated fatally had it not been for this remedy. I do not like it so well as compressing the bleeding vessels with my fist;

and one of the best arguments against it is, that there is such a thing as internal hemorrhage. As the uterus is now very large, an immense quantity of blood may still be poured into its cavity notwithstanding the plugging of the vagina and lower portion of the uterus. For this reason I employ this remedy with rather a faithless hand. But if it is resorted to, means should be used to prevent the dilatation of the uterus; this is to be done by pressure externally with your hand, or with napkins folded and placed on the abdomen, making a pile of compresses, which are to be bound down by a bandage placed over them and carried round the body: with this precaution, they say, you may safely trust to the vinegar plug. I have recommended three remedies for the treatment of uterine hemorrhage. These are the removal of the placenta when detached, pressure, and cold. In addition to these, I think it a promising expedient to take a sponge dipped in vinegar, and carrying it up through the uterus, apply it to its fundus. I fear nothing so much as hemorrhage, which in five or ten minutes may occasion death, and should therefore not hesitate to dab the fundus uteri with vinegar. So many trifling remedies are recommended in these cases, that lives are often lost by postponing to them the employment of more powerful ones. Thus much for the suppression of uterine hemorrhage. Next of the treatment of its effects upon the constitution.

Syncope is the common consequence of a profuse loss of blood. Some practitioners consider the occurrence of syncope an advantage, inasmuch as the circulation is, during this state, reduced very low, and the hemorrhage is in consequence restrained. Others

consider the syncope itself a state of danger. These opposite views lead to equally opposite treatments: those who consider syncope an effort of nature to restrain hemorrhage, are fearful of giving stimulants by which the circulation will be excited, and the hemorrhage renewed; those who fear the state of syncope itself, give stimulants to avert that which they regard as the most formidable danger. Moreover, it is alleged by those who do not consider syncope a salutary effort, that the uterus does not contract during its continuance. I believe myself the best remedy for syncope is that which most effectually restrains hemorrhage; and consequently the best treatment is that which will induce the contraction of the uterus. It is certainly true that the uterus during syncope contracts but feebly; yet I can positively assert from experience that it will contract during this state. Upon the occurrence then of syncope, I should still direct my efforts to producing contraction of the uterus, which I should endeavour to excite by the pressure of my hand against its fundus in the manner before described, by the injection of cold water into the uterus, or by the external application of cold with a shock. If the syncope was not long continued, or if the circulation was resumed with a distinct though rather languid pulse between each fit, I should, in this moderate kind of syncope, be very cautious in administering a stimulus, or if I gave any, it should be perhaps only a glass of cold water. If in this state of things I succeeded in producing a contraction of the uterus, I should not fear the effects upon the constitution of this degree of syncopetic affection. But if the hemorrhage is at once so sudden and profuse as to endanger life, if the

syncope is protracted; if a pulse, however feeble, cannot be felt at the wrist; if there is in connection with this state of the circulation disordered respiration, convulsive action of the larynx, or vomiting, then the state is truly an alarming one, and, in addition to the use of the most powerful means to excite the contraction of the uterus, calls for the vigorous employment of remedies which are calculated to restore the circulation. The stimuli employed on occasions of this kind are brandy, ammonia, and laudanum. Under a state of syncope of the kind just described, you may give equal parts of brandy and water, frequently repeated; you may give large doses of ammonia in water; you may give laudanum in brandy and water. The stimulus of brandy is not the best of these, being liable to the objection that a greater degree of fever is afterwards produced by it than by the others. Ammonia excites the organs of circulation, but tends less to produce subsequent fever. But of all the remedies for the relief of the most alarming symptoms which ensue from loss of blood, laudanum is the best. Dr. Hamilton, of Edinburgh, whose judgment in this department of practice is equal to his great experience, in a case of the kind here alluded to, would recommend even a hundred drops of laudanum, or, if this is rejected by vomiting, five grains of opium in powder with aromatic confection. All these means of restoring the circulation require to be repeated as often as may be indicated by the degree of their success, or by the state of the patient. The circulation being fairly restored, the same remedies should be given at longer intervals, and in lesser doses, to sustain the circulation, which

may otherwise again fail. If you withdraw opium suddenly, the constitution may as suddenly sink; therefore withdraw it gradually, by diminishing the dose, and the frequency of administering it. After the circulation is again fairly established, much care and attention will still be required to preserve its proper equilibrium, lest violent reaction should take place in any important organ; for this reason an unstimulating diet must now be enjoined, and aperients directed as occasion may require.

It sometimes happens that without the accompaniment of hemorrhage, there is merely a *retention of the placenta*, which may be situated high up and firmly attached to the uterus: here you must endeavour to excite the contraction of the uterus, by rubbing and pressing the belly; if it produces pain, so much the better, as this is the indication of an action of the uterus by which the placenta may be separated. But suppose your efforts are not successful, what next are you to do? there is then no remedy but to introduce the hand and bring away the placenta. How soon, and in what manner, is this to be done? If there is no hemorrhage, the longer you wait the better; the placenta is never so safely expelled as by the efforts of the uterus; for when it is clawed from the surface of the uterus, there is generally a piece, or shreds of it left behind, which will undergo putrefaction, occasion a highly offensive discharge, perhaps irritative fever, and even death. I would recommend you to wait at least two hours after the birth of the child; if you wait four, so much the better, and at frequent intervals during this time use pressure and friction on the abdomen. If after waiting this time the placenta is

not expelled, you must pass up your hand and separate it; you may find it either simply attached to, the uterus, or imprisoned by the hour-glass contraction, with or without an attachment to the uterus. In either case separate and extract it in the manner formerly directed. It is dangerous to leave the placenta very long in the uterus. There is a practitioner in this town, of very extensive practice, who says that hemorrhage is always produced by attempts to separate and extract the placenta; he, therefore, sometimes leaves it for days in the uterus; and I have seen in one week two deaths from his adherence to this practice. One of the patients alluded to, when I first saw her, had a face like wax, a hurried respiration, with a rapid thready pulse; she had been delivered three days, and the placenta had not been removed. I asked her medical attendant where it was? is it detached? He replied, I know not. When did you examine? Last night I made an examination, and found the placenta in the vagina. I took it away; it stunk worse than any of your macerating tubs: the patient died in a few days from symptoms of irritative fever produced by the presence of this putrid mass. During the three days which intervened between her delivery and my visit, she had repeated attacks of hemorrhage, which had thus blanched her face. The face, indeed, in these cases, is usually pale, except during the exacerbations of fever, when it has a hectic flush. In the other case, I found the placenta lying within the orifice of the uterus: this patient also died with similar symptoms. Nothing had been done but to apply vinegar cloths to the pudenda. This treatment some practitioners think the ultimatum of our

art; and when the patient dies, they say very gravely, screwing up their mouths, that every thing was done that could be done, and thus they console themselves for their ignorance. This treatment amounts to nothing; if the placenta is retained longer than two, three, or four hours, and you cannot by friction, pressure, &c. on the abdomen excite the uterus to expel it, you must introduce your hand into the uterus and bring it away, in the manner before described; and until this is done you must not leave your patient.

LECTURE THE FOURTH.

ON DIFFICULT LABOUR.

If the practice of midwifery be an art, it consists, not in the treatment of a natural labour, in which we have nothing to do, but to look on and beguile the time until it is over; but it is in conducting the patient safely through those deviations from the natural process which every now and then occur. These deviations may be arranged under three heads:—

1. Impeded labour.
2. Unnatural presentations.
3. Complicated labour.

Section I. *On impeded Labour.*

In impeded labour the position of the child is supposed to be natural, but there is on some or other

account unusual difficulty in its passage through the pelvis. The difficulty, or facility, with which a body passes through any orifice or canal, depends on three circumstances. First, the propelling power. Second, the size of the aperture. Third, the size of the body propelled, relatively to the opening through which it has to pass. Applying this general rule to the process of labour, first, if the uterus, the propelling power, is either weak or irregular in its mode of action; or, second, if the aperture, whether of the pelvis, os uteri, or of the canal of the vagina is contracted; or, third, if the head of the child is unusually large — either of these circumstances will retard the progress of labour, and to one or more of them is to be referred every variety of tedious or impeded labour.

An inadequate exertion of the uterus may be owing either to fever, not of the idiopathic kind, but rather a hurried circulation, hot skin, &c. to mental emotion, as fear for example, or to debility.

A febrile state of the system sometimes precedes and accompanies labour, rendering the action of the uterus sluggish or inefficient. The objects of treatment in this case are to cool the skin, and to tranquillise the circulation: the patient should be kept quiet in bed; her diet should consist of gruel, tea, barley water, &c., and her mind should be kept free from disturbance; the bowels should be cleared by an aperient medicine; and if these means are not sufficient, a few ounces of blood should be taken from the arm. If you can relieve the heat of the skin, and tranquillise the circulation, the uterus will exert itself, and the labour will proceed in the customary manner.

Depressing emotions of the mind have considerable

influence on the action of the uterus, even the sight of the accoucheur, more especially if he is a stranger, or if his manners are not agreeable, may suspend the action of the uterus for perhaps half an hour. A lady whom I attended, owing to an apprehension that she should die if she became pregnant, was persuaded, with great difficulty, to marry. Her mind was still so impressed with this fear, that notwithstanding all the encouragement I could give, it had the effect of protracting her labour to the period of thirty-six hours. Since the death of the Princess Charlotte* I have had many opportunities of observing the same effect from a similar apprehension. In this state of mind we must keep up the spirits of our patient, both during her pregnancy, and at the time of labour, by anecdotes of the most favourable accouchements of those who have entertained equal apprehensions, and by every species of encouragement in our power.

Constitutional debility, in which the uterus participates, is one of the most frequent causes of protracted labour. The class of females to which I particularly allude, are those subject to fainting fits, hysteria, and all the tribe of nervous affections. Often have I been detained many hours, when if the uterus had acted with vigour, a few pains would have expelled the child. Those who have a languid circulation, and a weak constitution, are benefited by cordials and good nourishment; you may give half a glass of wine, once in two or three hours, which will invigorate the system, and render the action of the

* This event occurred a few months before the delivery of these lectures.

uterus more powerful. Debility of the muscular system, in which the uterus participates, is sometimes the effect of disease. A sentimental young man fell in love with a young lady of a sickly habit, who was as pale as a corpse, and had, as the doctors thought, tabes mesenterica; and this sentimental young man and sickly young lady were married. All their friends cried shame, and said surely she never will become pregnant; she however did become pregnant, and I attended her in her confinement. It was a breech presentation: I cheered her up, and supported her with nourishment, and occasionally with wine. The labour was extremely tedious, but as the breech descended, I was enabled to render considerable assistance by passing my fingers into the groins of the child, and she did well in spite of her pale face, and languid circulation. Always in breech presentations, acquaint the family that every thing is right as it regards the mother, but that the position of the child is such as to endanger its life. Thus your reputation is safe if the child is dead, and you gain credit if it is born alive.

An irregular action of the uterus is a very common cause of protracted labour. The child is said to be expelled by the pains in the common language of midwifery; but it is by the contraction of the uterus attended with pain, and this so constantly, that the term "pain" is used to denote the contraction also which is its accompaniment. But it sometimes happens that the pains are frequent and intolerable; yet they produce no effect on the child, and the os uteri does not become dilated. When the uterus acts in a regular and efficient manner, at the time of a pain you

feel its orifice enlarged, and the distended membranes pressed against it; but in those which are called false or spurious pains, the os uteri is not dilated, and the distended membranes are not pressed against it. In this case the edge of the os uteri is so far from being rigid, that when the liquor amnii has escaped, and the bald head presents, you may slip the os uteri up a considerable way over it; still the pains are not attended with contraction of the uterus, or else the uterus contracts in an improper direction, so that there is no expulsive action on the child, and no dilatation of the os tincæ. What are you to do? They tell you that these are spurious pains, which will cease under the exhibition of opium. I wish this remedy could be depended on; but I have given opium in one, two, and three grain doses, and it has often failed: it occasions headach and a sick stomach; it relieves the pains in a slight degree; but they will still be sufficient to keep the patient awake and miserable, and you had better not resort to it. An old practitioner told me he often relieved these spurious pains by a laxative dose of sulphate of magnesia, followed by twenty drops of the tincture of hyosciamus every three or four hours. I am tired of giving opium in these cases; my remedy is *tincture of time*, the loss of which is the only thing to be regretted, for it at least produces no additional evils. You must keep up the spirits and confidence of the patient and her friends: a female companion who has herself had half a dozen tight labours, and who can tell stories of friends who have been a week in labour, and have done very well at last, will be a good assistant to you.

The uterus will sometimes be stimulated to con-

tract by rupturing the membranes, or by an injection of salt and water up the rectum; but either expedient must be employed with caution. Never rupture the membranes until the os uteri is almost or entirely dilated; if this is done prematurely, you lose the benefit of their distending force in the dilatation of the os uteri, and the labour will be greatly retarded. But when the os uteri is fully dilated, and the pains ineffectual, you may rupture the membranes and let out the liquor amnii; the head of the child taking their place, will often stimulate the uterus to act with more vigour. I have frequently, in these cases, thrown up into the rectum an injection composed of two table spoonsful of salt, with eight or ten ounces of warm water and a little olive oil, this is often followed by a speedy and more vigorous action of the uterus; and if the uterus again acts languidly, I repeat this injection, from which I never saw any ill effects, every two hours.

The Americans recommend the ergot of rye, in doses of half a drachm or two scruples, and affirm that the uterus is almost immediately excited by it to a vigorous action. I never used it, neither do I credit what has been said respecting its efficacy.*

A narrow or contracted state of the soft parts is

* I have had many opportunities of putting this remedy *fairly* to the test, by administering it in cases, the tediousness of which, I had been led to anticipate, by my attendance on the same women in former labours, which were exceedingly protracted from a sluggish and ineffectual action of the uterus. I have repeatedly given the ergot in half drachm, and two scruple doses; I have given it both in powder, and in infusion; and I never witnessed in any one instance the slightest benefit from it.—Edit.

another of the causes enumerated of impeded labour. If, at the commencement of labour, you make an examination, you will find that the vagina is separated from the cavity of the uterus by the portion called its cervix, in the centre of which you will perceive a small circular orifice termed the os uteri; and until this circular aperture is fully dilated, the child cannot be born. The dilatation of this aperture is so slow a process, that it generally occupies two thirds of the duration of labour. In a first labour, the os uteri dilates slowly, but more quickly in a young girl of eighteen or twenty who is healthy and vigorous, than in women at a more advanced period of life. In women of forty years of age or more, if they have never before had a child, the process of dilatation is very tardy, the os uteri is often, though not constantly, found rigid and dry. In some cases the slow dilatation of the os uteri is owing to a state of disease. The cervical portion of the uterus is sometimes thick, hard, gristly, hot, and painful, as if in a state of subacute inflammation; here the dilatation proceeds very slowly, and the os uteri, to the touch, instead of conveying the sensation of an orifice in a piece of broad cloth, feels like an orifice in an inch deal board. In slight cases of this kind, the warm salt and water injections before mentioned are of great service, relieving, as by a fomentation, the sub-inflammatory state of the cervix uteri: but when this peculiar state of the parts exists in a greater degree, bleeding is a still better remedy; for this rigidity is not owing to a deposition, as is proved by the relaxation produced by syncope. When, therefore, the labour is long retarded from this cause, I advise you to take away about four-

teen ounces of blood; if the patient faints, do not be in a hurry to recover her, but rather support her for a few minutes in the upright posture. The pains during the faintness cease, and the labour is at a stand; but as soon as the syncope is over, the orifice, which before was rigid and dry, becomes lubricated and relaxed.

There is another state of the os uteri which renders its dilatation tedious; instead of being preternaturally hard, it is soft, flabby, and œdematous. This state is generally induced by an early rupture of the membranes, owing to which the cervical portion of the uterus is compressed between the head of the child and the pubes; and the return of the fluids being obstructed, the os uteri becomes thickened, and its dilatation is in consequence extremely slow. The best remedy in such a case is patience; the dilatation, though in general very tedious, is however sometimes accomplished in a few minutes. I attended a lady whose former labours had been very quick; on my arrival I found the pains were strong, and though the os uteri was only dilated to the size of half a crown, I, like a simpleton, patted her on the shoulder, and told her to keep up her spirits, for the child would soon be born. A man must be a goose under such circumstances to give such a prognosis: for he knows not when the labour will be over; and if his prognosis is not verified he loses credit. Hour after hour passed, and the pains continued, but the os uteri was not more dilated, the labour pains became still more rapid and violent; she complained also of a constant pain near the symphysis pubis, and I feared a laceration of the uterus would take place. I bled her to the

amount of fourteen ounces; she fainted; I kept her in an upright posture in order that the syncope might produce its full effect; the pains were suspended for about half an hour, when they returned, and her cheeks resumed their natural colour. I examined, but found the bleeding had done no good. I then applied two fingers against the edge of the os uteri next the symphysis pubis, and pushed it up at the time of a pain, and kept it up after the pain was gone off: at the next pain I pressed the os uteri still higher, and repeated the same proceeding at about a dozen pains, when the os uteri slipped quite over the head of the child and the labour was soon over. In the thick, spongy, and œdematous state of the os uteri this plan answers very well; I have found it succeed in many cases, and there is no occasion for bleeding. Do not suppose that every slowly dilating os uteri is to be thus treated; the delay may be for the reason, that the uterus is acting in a wrong direction, when this method is of no use; or the os uteri may be rigid, dry, hot, and painful, when any attempt on your part to dilate it would do mischief; it is only in the thick, spongy, œdematous state of the os uteri that this kind of artificial dilatation can be of service. Pare your nails close, that you may not scratch the os uteri, and do not press it upwards, and against the symphysis pubis, by which you may irritate or injure the urethra, but rather on one side of the course of the urethra. The os uteri is sometimes thus slipped over the head with the greatest facility, and I have been surprised at the advantage I have gained by it; but if this cannot be accomplished in ten or a dozen pains, you will not succeed at all, and you had better not persevere in the attempt.

It sometimes happens that women become pregnant in whom the os uteri has been destroyed by previous disease. A case of this kind was related to me by a gentleman on whose veracity I can rely, in which, after a miscarriage, extensive sloughing of the vagina took place, extending to, or rather comprehending also, the os uteri, in place of which there was only a hard contracted circle, as if formed by a cicatrix. This woman was attended in her labour by three surgeons, all of whom agreed in the fact that the os uteri was lost. The labour pains were not sufficient to force the head through this unyielding portion of the passage; the head had descended low into the pelvis, pushing the lower part of the uterus before it. After waiting a considerable time, and the strength of the patient being almost exhausted, it was determined by the professional attendants to cut an os uteri. The patient was taken out of bed, and placed in the position for lithotomy, so that the light fell on the vulva: by dilating as much as possible the external orifice, the cervical portion of the uterus was apparent, as well as the cicatrix in the situation of the os uteri. This part was first punctured with a sharp-pointed bistoury, and an incision of considerable extent was then made with Pott's bistoury. The patient was replaced in bed, the labour pains returned, and the head was forced through the opening, rending it right and left. Some alarming symptoms now occurred; and, as the head descended slowly, it was perforated, and she was speedily delivered. In forty-eight hours after her delivery, this woman had no bad symptom: there was a purulent discharge from the vagina, for about a fortnight, after which she recovered perfectly, and

is now pregnant again. Many similar cases, which were treated in the same manner, have been recorded: some of them terminated successfully, and others fatally, in consequence of the operation having been too long delayed.

It sometimes happens that adhesions form in one or more portions of the vagina, from inflammation, or, perhaps, sloughing. A sufficient opening remains for the purposes of menstruation and conception; but a considerable impediment is presented to the passage of the child's head. If the force of the labour pains is not sufficient to break down such adhesions, they must be divided with Pott's bistoury.

We now come to speak of *deformity of the pelvis*, which constitutes by far the most formidable impediment to the progress of labour. The dimensions of the well-formed pelvis are, at the upper aperture from pubes to sacrum, four inches and a half; from ilium to ilium, five inches and a half: these dimensions, in the lower aperture of the pelvis, are reversed. The usual dimensions of a child's head of the natural size are, from ear to ear, three inches and a half; and from the os frontis to the occiput, four inches and a half. If the head of the child is of the customary size, the bones in a well-formed pelvis present no obstacle to its passage into the world.

The dimensions of the pelvis in different women are liable to considerable variety; but every narrow pelvis is not a deformed one: many women whose figures are otherwise good, have narrow hips: they are not, however, well made for child-bearing. The hips in women are broad and the shoulders narrow; in men the hips are narrow and the shoulders broad. There is very

little difference in the dimensions of the hips of male and female children, till about the age of nine years, when the female pelvis begins to expand, rather preceding the developement of the soft parts. A narrow pelvis is an imperfection of growth, but not a deformity. Deformity of the pelvis is the consequence of a disease called rickets, with which children are not unfrequently affected. In this disease the bones have not their natural firmness, and are therefore disposed to become bent and distorted. The bones of the pelvis are liable to be thus affected, and the distortion which occurs in childhood, when the bones are soft, is afterwards continued when they have acquired the customary hardness. To an unmarried woman this is of no consequence: the deformity will, perhaps, not be detected unless she becomes pregnant, when, at the time of labour, it may be found that her pelvis, instead of being four inches and a half from pubes to sacrum, is only three inches and a half, three inches, two inches and a half, or even less.

Deformity of the pelvis may occur in adults from mollities ossium, and a woman who has had two or three easy labours may afterwards have a difficult one. This disease is, however, extremely rare.

Deformity of the pelvis is generally the consequence of rickets, and it may occur in different directions. The most frequent deformity is that from sacrum to pubes, and it is produced by the superincumbent weight of the vertebral column, &c. by which the sacrum, when soft from disease, is pressed downwards and forwards towards the pubes, and the pelvis, in consequence, is more or less contracted in the different instances. The bones being soft and

waxy from disease, the pelvis may be deformed in other directions: the heads of the thigh bones sometimes press in the acetabula, and the bones of the pubes are pressed closer together and made to project in front; or by the pressure of sitting, the ischia may be bent, and the arch of the pubes will in consequence be much contracted.

There is, however, but one kind of deformity which is frequently met with in practice, and this is the projection of the promontory of the sacrum towards the symphysis pubis — the other varieties a person may perhaps not meet with in the course of his life, therefore it is this which principally demands our attention. It is commonly stated that the child may be born alive, though it will be expelled with difficulty, if the space between the bones is three inches and a half, provided the head is of the usual size; if the space is only three inches, the child will not be born alive, though it may be extracted without perforating the head; if only two inches and a half, the child may be extracted by perforating the head; if only two inches, or less, though the head may be opened the child cannot be brought through this space, and the woman can then be delivered only by the Cæsarian section. These computations are not to be considered as infallible; for Dr. Clarke and Dr. Osborn have affirmed, that when the space between the sacrum and pubes is only one inch and a half, by opening the head, the child may be extracted.*

Tumours about the cervix uteri, vagina, or pelvis, may impede the descent of the head of the child.

* See Lond. Med. and Phys. Jour. vol. vii. p. 40.

The gentleman with whom I received the first part of my professional education, was called to a lady whom he had formerly attended in easy labours; on examination, he was perplexed by finding the vagina plugged by a soft round tumour, which appeared to be attached to the back part of this canal; he passed his finger up in front of the tumour, and felt the distended membranes; a pain came on, and they were ruptured. He could then distinguish the head of the child. After several pains, and the lapse of a considerable time, the head did not advance; he therefore turned the child, and extracted it by the feet; but the tumour so long retarded the passage of the head that the child was born in a state of asphyxia; while he was attempting to restore its animation, the placenta was expelled naturally, and the state of his patient when he left her was in all respects favourable, except that the tumour still remained in the vagina. In about six hours afterwards, he was informed by a message that another child was coming away. On visiting her again, he found she had violent bearing-down pains, and, to his great embarrassment he discovered a livid tumour protruding at the external orifice — he gave her a dose of laudanum, but the pains still continued, she became weak and pale, and her pulse began to sink. He sent for Mr. Rigby of Norwich, but she expired before he arrived. On examination the following day, the uterus was found quite contracted, while from the posterior edge of the cervix uteri, hung, by a large neck, a polypus which filled the vagina. Dr. Denman relates a similar case. It is difficult to say what could have been done in such a case: there can, however, be no question but the polypus,

if sooner discovered, should have been removed by the application of a ligature. This lady did not die from hemorrhage; and therefore it appears that long-continued action of the uterus, whether there be a child to expel or not, is capable of exhausting speedily the powers of life.

The birth of the child may also be impeded by other fleshy tumours * filling the vagina, or by tumours containing a fluid or gelatinous substance.† When ovarian dropsy exists during pregnancy, the uterus and the ovaries generally go on enlarging at the same time. When the labour is over, it is difficult to determine by external evidence, owing to the enlargement of the abdomen, whether there does not remain another child in the uterus. This can be ascertained only by passing your hand into the cavity of the uterus. But when the ovarian tumours are small, as the uterus enlarges they slip into the pelvis; and, when labour commences, they descend before the head of the child. If a tumour of this kind, or one in which a fluctuation can be discovered, should fill the vagina so as to impede labour, it must be evacuated by tapping it.

I have now to draw your attention to the size of the

* Dr. Drew removed, by incision through the perinæum, a solid tumour from the pelvis during labour, which prevented the descent of the child: it grew from the sacro-sciatic ligament; measured fourteen inches in circumference, and weighed two pounds eight ounces. Both mother and child did well. See Edinburgh Med. and Surg. Jour. vol. i. p. 20.

† See Observations on Tumours within the Pelvis, occasioning difficult Parturition, by Mr. Park of Liverpool; communicated by Dr. Yelloly. Med. Chirurg. Trans. vol. ii. p. 296.

child's head, as a cause of protracted labour. Some children are naturally large; and the dimensions of the head are usually proportionate to the other parts of the body. I have seen a child which, instead of the customary weight of eight pounds, has weighed sixteen pounds at the time of its birth. These enormous heads impede labour very much, and cause the patient to suffer greatly. But in some instances there is a morbid and disproportionate enlargement of the head. Children while yet in utero are liable to hydrocephalus; and the head, instead of measuring three inches and a half from side to side, might measure four or five inches. In the cases of this kind which I have met with, the head has been situated uppermost, and the feet have presented. I was lately sent for to a case in which the feet and body of the child had been born a long time, but the midwife could not extract the head. The child was dead from the compression of the cord: I perforated the head behind the ear, when a quantity of water gushed out, and the head immediately descended. The head, however, though enlarged by hydrocephalus, sometimes presents naturally. I should suspect an impediment of this kind in a case in which the head did not descend, though the pains were strong, the pelvis well formed, and the os uteri fully dilated. I shall recur to the treatment of these cases when I have to speak of the use of instruments.

The head of the child may be of a natural size, yet it may be so placed as to impede the progress of labour. There are two deviations from the natural position:—the first, when the occiput is towards the sacro-iliac junction with the face towards the opposite

groin; the second, when the head is so situated as to form a face presentation. In the first of these the child descends easily, with its face turning towards the pubes, and the occiput in the hollow of the sacrum, until it begins to pass under the arch of the pubes, when, instead of the occiput, which is the smallest, the forehead, which is the widest end of the oval, comes foremost. Dr. Clarke, who has written on these cases*, says, if this position is discovered before the head has descended low into the pelvis, the pressure of one or two fingers against the temple of the child during a pain will correct it, by turning the face towards the sacro-iliac junction, and consequently the occiput to the opposite groin, when the head will be naturally placed. But this presentation is often fancied when it does not exist, and is as often overlooked when it does. Smellie said he was not aware of the existence of this misplacement until the child was nearly born. The difficulty in these cases is over-rated. If the face is towards the pubes, this position is certainly unfavourable to an easy delivery; but if this deviation is not complicated with other causes of impediment, it is of no great consequence. To accomplish the delivery may require a few additional pains, but not in general the use of instruments, as is by some supposed.

The second position of the head by which labour will be impeded is the face presentation; but if this is not complicated with other difficulties, it is merely a modification of natural labour, which is, in conse-

* See Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. ii. p. 229.

quence, rendered more difficult and tedious. In this kind of presentation, the eyes, nose, and mouth are foremost, and thus the head descends into the pelvis; the forehead rests on the perinæum, and the chin is towards the pubes: the chin turns under the arch of the pubes, just as the occiput does in a natural presentation, and is expelled in a similar manner; but the chin may be in the hollow of the sacrum, and the forehead towards the pubes. This modification of the face presentation is of rare occurrence, and the delivery is attended with increased difficulty, as the widest part of the presentation has to pass through the narrow space between the rami of the pubes: it bears the same relation as regards the difficulty of expulsion to the more common face presentation, as a fontanelle does to a vertex presentation. It is asserted by some practitioners that the face presentation requires the application of the forceps; I believe myself that it requires only more time, more labour-pains, and more patience, than a natural presentation.

(a.) On the Injuries arising from Protracted Labour.

Before the practitioner in midwifery can judge how long a labour may be safely permitted to continue, or at what period artificial delivery is required, he must know what evils to expect from its protracted duration, and how they may be detected on their first occurrence.

Protracted labour may induce an inflammatory state of the uterus, which will be owing to its violent and

long-continued action, and this state of the uterus may be extended to the peritoneum. The natural powers may have accomplished the labour, yet this inflammatory state may have been induced; and it may terminate fatally, either in a few hours, or in two or three days. As labour is itself attended with pain, this inflammatory state may not be readily detected. During a labour-pain, the woman screws up her mouth, bears down, and groans for half a minute or so; the pain being off, she is perfectly easy till the next comes on: but when inflammation has occurred the pain is constant, though aggravated during the action of the uterus. Constant pain in the belly, with tenderness to the touch, and a rapid pulse, attended with shiverings and vomiting, constitute the symptoms of incipient uterine and peritoneal inflammation. It is necessary that the pain of inflammation should be distinguished at its commencement from that incident to labour; for, unless the inflammation is speedily treated by active measures of depletion, it will most probably have a fatal termination.

The head having descended low into the pelvis, it may become impacted, acting on the soft parts like a wedge, by which inflammation and sloughing of the vagina may be produced. In this case also the natural powers may be adequate to accomplish the delivery. But if inflammation has been excited it may terminate in sloughing, and the patient may die from a gangrenous wound. If death does not in this stage terminate her sufferings, she is likely to exist a most unhappy creature; for the sloughs sometimes extend in front into the urethra and bladder, and behind into the rectum, making a communication between

these passages; her vagina becomes a common receptacle for both urine and fæces; and as these fistulous communications are generally incurable, she remains till death a disgusting object both to herself and her husband.

There may be no inflammation either of the peritoneum or vagina, but the life of the patient, during a protracted labour, may be endangered from exhaustion. So long as the strength is not greatly reduced the labour pains will be regular and vigorous, recurring every five or ten minutes: but these actions of the uterus are at the expense of the whole constitution; the vis vitæ becomes exhausted from their long continuance, the pains become slow and feeble, gradually they cease altogether, and the patient dies. I was called to a lady whose strength was much exhausted by ineffectual labour owing to a contracted pelvis; I delivered her by opening the child's head, and she recovered. I proposed, if ever she became pregnant again, to bring on labour at the seventh month: she did become pregnant, but chose to go her full time, and was attended in her labour by an ignorant midwife. The labour pains were of course ineffectual: they were, however, suffered to continue until she was quite exhausted, when I was sent for, and arrived only a few minutes before she expired.

How are you to know that the constitution is exhausted? I have many times been sent for both by old and young practitioners who have supposed their patients to be exhausted, and I have often found them sweating with pain, kicking and rolling about the bed, with a pulse strong, and the uterus acting so vigorously as to make them roar: yet in the midst of all

this display of vigour the women themselves have exclaimed that they are exhausted. Never mind what their tongues say, but what their pulse, uterus, and constitution say. If there is a rapid feeble pulse; if the pains are slow, weak, and as it were dying away, and if the countenance is sunk, these are the symptoms of exhaustion, and when they occur we have waited long enough. But you are not to consider every abatement of the pains in labour as a proof of exhaustion. Often in natural labour you will find the pains go off, or become very slow: but feel the pulse, and you will find it strong and rapid; the labour is becalmed by a suspended action of the uterus; but the uterus may be inactive while the powers of the constitution are by no means exhausted. Hence the dangers to be apprehended from *mere protracted* labour are three—first, inflammation of the uterus, and peritoneum; second, inflammation, sloughing, &c. of the vagina; third, exhaustion:—each of which is to be discriminated and treated in the manner before directed.

It has been seen that there are three principal varieties of impeded labour, each of which admits or requires a different mode of artificial delivery. First, if the head is opposed only by a moderate impediment, it will descend into the cavity of the pelvis long before the patient suffers from protracted labour; when, if necessary, you may deliver by instruments which are harmless both to the mother and child. Second, if the impediment is more considerable, the patient may be exhausted by protracted labour while the child is yet high up: this state admits of delivery; but in order to preserve the life of the mother, it will be necessary

to sacrifice that of the child. Third, if the impediment is of the worst kind, delivery can be accomplished only by the Cæsarian section. The instruments by which delivery may be accomplished with safety both to the mother and child, are the forceps, the vectis, and fillet: the last is now entirely laid aside; the two first were not invented till the middle of the seventeenth century. About that time there was in London a family of accoucheurs, a father and two sons, named Chamberlain, who, it was generally said, possessed a secret which enabled them to deliver women without injury to the mother or child: they would not disclose their secret; they monopolised almost the whole midwifery practice of London, and of course made their fortunes.

The first account we have of the forceps was in the year 1733; and these instruments were supposed to be the same as those which Chamberlain had employed, the truth of which conjecture was not confirmed until within the last four or five years.* The history which I received from Mr. Carwardine, of Essex, runs thus; —Woodham Mortimer Hall, in Essex, is an old manor house, and was once the residence of old Chamberlain, since whose time it has been occupied by several individuals. About four years since Mr. Kemble, in exploring an old closet in this house, discovered a trap-door, which being opened was found to lead into another closet, in which were boxes containing letters, rings, jewels, trinkets, among other things old Chamberlain's will, and a ring with the hair of Mrs. Chamberlain, which appeared to have been placed there by

* This was said by Dr. Gooch in 1818.

her daughter, with the following written memorandum: —"This lock of hair was taken from my dear mother after her death." There were also two bags of instruments, consisting of different specimens of the forceps and vectis: there was a petition also to the House of Commons, lamenting the number of deaths occasioned by ignorant midwives, and stating that himself and his sons possessed a knowledge of means by which women may be delivered without injury to either the mother or child; and hinting slily, that if the House of Commons would grant him a sum of money, he would, at their command, disclose the secret. Old Chamberlain was buried in the church yard near by; and on his tomb stone is engraved "that he was born in 1601, and died in 1692, and had been physician to three kings; to wit, Charles the First, Charles the Second, and James the Second; that he was baptised when he was forty-eight years of age, after which he kept the sabbath." These circumstances leave no doubt that the instruments found in the closet were those which Chamberlain employed, which were similar to the forceps and vectis now in use, and of the application of which I have next to speak.

(b.) On the Employment of the Forceps.

I have said it is necessary, in the first place, that you should be acquainted with the injuries which may ensue from protracted labour; and that you should be qualified to recognise the earliest symptoms by which their approach is manifested. As long as the uterus acts with regularity and force, so long is the patient free from exhaustion. As long as there are distinct intervals between the pains, and no ten-

derness of the abdomen on pressure, there is no peritoneal inflammation; and as long as the vagina feels of its natural temperature, moist, and without tenderness, there is no inflammation of this part. When the vagina suffers a long-continued pressure, there is danger of its becoming inflamed; and when inflamed, it feels hot, dry, and tender, and loses, as a consequence of the inflammation of the mucous membrane, the natural secretion by which it is lubricated. These symptoms prove that inflammation has already begun; the rapidity with which this state is established is in proportion to the pressure suffered by the soft parts between the pubes and the hard head of the child: but as long as you can pass your finger all round between the head of the child and the pelvis, and as long as the vagina is not hot or tender, and is lubricated with mucus, so long is this part free from inflammation. When the impediment to the passage of the head of the child is only moderate, the head will descend into the pelvis long before the injuries of protracted labour will occur, and the woman may then be delivered by the forceps. When are you to use the forceps? and when are you not to use them? If the patient suffers from exhaustion, peritoneal or vaginal inflammation, no man would hesitate a moment on the propriety of applying them; but if ineffectual labour has continued so long that a natural delivery seems improbable, there being no symptoms of injury from protracted labour, the case is less urgent, and admits of two opinions. Some say, if you wait a few hours the labour will be accomplished by the powers of nature; and if you apply the forceps you do it unnecessarily. If you apply the forceps merely because you think that the labour will not be

completed naturally, it is an evil; but should you permit the occurrence of the injuries of protracted labour, by withholding assistance, it is a much greater evil: for when any one of these has taken place, it may go on to a fatal termination in spite of the best treatment. You can never allow the symptoms of exhaustion, of inflammation of the peritoneum or vagina, to take place, without the risk of their proceeding so far as to be beyond the control of art. But do not think that I recommend the employment of instruments unnecessarily; for they are an evil, and are never introduced into the vagina without some hazard. The first time I ever saw the forceps applied, it was done with great care by a gentleman as skilful as any in this metropolis; but he lacerated the perinæum quite into the anus, and the opening remains to this day. The first time I used them in the Westminster Lying-in Hospital I lacerated the perinæum, and could not avoid it, though I took special care. Not long since a practitioner of great professional accomplishments sent for me to consult with him on a most distressing case; the head during the labour (which had been over four days) had rested a long time on the perinæum: he applied the vectis, using it with great care and attention. He succeeded in delivering the woman, and believed the labour to be well over; but within twenty-four hours afterwards a violent burning pain came on in the vagina, with fœtid discharge and shiverings, followed by a hot skin and rapid pulse; the teeth and tongue soon became covered with black sordes; there was low delirium; and death soon terminated the scene. The death of this patient was occasioned by inflammation, gangrene,

and sloughing of the vagina, produced by the pressure of the instrument against the soft parts. Even by men who possess more than an average share of skill, instruments are never used without risk of injury to the soft parts; the unnecessary employment of them must, therefore, be considered highly reprehensible.

If the patient has been in labour a great many hours, and the head has descended into the pelvis so low as to touch the perinæum, it should then be expelled in half an hour: but Nature sometimes takes seven or eight hours to finish the remaining part of the process, during a considerable part of which time the labour is at a stand, or makes but little progress. Still, if the pains are vigorous, and the patient free from symptoms of injury from protracted labour, the aid of the forceps is not required; for the head does advance, though very slowly. But suppose the head has been low down many hours, and has not advanced in the slightest degree, if the labour were to remain in this state for twelve hours, although there may then be no bad symptoms, I should not hesitate to apply the forceps, rather than allow the near approach of symptoms which, if established, may be beyond the control of art. I lately attended a lady whose labour was very protracted, owing to the feeble action of the uterus. In about twenty-four hours after the rupture of the membranes the os uteri was fully dilated, and the head low down in the pelvis. I expected the labour would now have been over in three hours at farthest; but the head continued to advance so imperceptibly that, like the hour hand of a clock, you could not know that it did advance only by a comparison at intervals; and twelve hours elapsed before the delivery was accomplished. A

practitioner who felt himself a master in the use of instruments might not have chosen to wait in this case for a natural delivery, and to such a one the tardy progress of the labour might have been a sufficient apology for resorting to them. Some practitioners use secretly the vectis (which they carry in their pockets as a carpenter does his rule) as soon as the head has descended sufficiently low, and has become a little stationary. I do not recommend you to imitate this practice; but if the head has descended low, if the labour has been a long time stationary, and you believe that it cannot be safely accomplished by the powers of nature, your best practice will then be to apply the forceps. I was sent for by an accoucheur who had been detained at a labour two days and a half. The head had been fixed in the pelvis and touching the perinæum fourteen hours. The patient's pulse was good, her skin cool, and the pains recurred frequently. Under these circumstances, I said I would wait three hours longer, and if she was not then delivered I would apply the forceps and deliver her in ten minutes; which I was obliged to do after the head had been retained low in the pelvis seventeen hours. In such cases as these, although a precipitate use of instruments is never justifiable, it is better for one who is familiar with the application of the forceps to deliver his patient after waiting a moderate time, than to permit the continuance of fruitless pains, or hazard the more serious evils of protracted labour.

Having thus settled *when* we are to apply the forceps, the next question is *how* are we to do it? I take it for granted that the os uteri is fully dilated, the membranes ruptured, and the head descended so

low in the pelvis as just to touch the perinæum. You are to place the patient directly across the bed, her head to one side and her breech to the other, and let the breech come so near to the edge that she fears she shall fall off; which of course you will prevent. The forceps are to be applied with one blade over one ear and the other over the other ear, of the child. But before you apply them you must feel an ear, which is in one of two places. The head generally enters the pelvis with the face towards the left sacro-iliac symphysis, and the occiput towards the opposite groin; in this stage of its descent, therefore, one ear will be found towards one groin, and the other towards the opposite sacro-iliac symphysis: but as the head descends lower into the pelvis, the face turns into the hollow of the sacrum and the occiput to the symphysis pubis, when the ears are one towards each side of the mother. In proportion as the head is high up in the pelvis, so is the ear towards the groin; but in one of these two situations it will generally be found. I introduce my finger up behind the symphysis pubis, and passing it round on the head, taking half the circuit of the pelvis, I cannot omit discovering an ear. People often say they fail in this attempt; the reason is, either that the head has not descended sufficiently low, or that the finger is not passed up high enough. The ear is generally towards the left groin, sometimes towards the right; and when the head is very low down, towards either side of the pelvis. The blades of the forceps must be introduced upwards and forwards in the direction from the anterior part of the perinæum to a point above, a little anterior to the promontory of the sacrum: this is the axis in which the head may be the most firmly grasped. I pass

my finger up so high as to feel an ear. I have often been astonished, on introducing my finger when the os uteri has not quite slipped over the head, to feel the cervical portion of the uterus so thin that I have with difficulty discovered its margin; *this is a matter which requires nice discrimination:* if you were to pass up the blades of the forceps on the outside of the cervix uteri, the laceration which must result would most probably be very soon fatal. Having felt the ear, I pass one blade of the forceps, previously warmed and smeared with lard, slowly and carefully up during the absence of a pain between my two fingers and the head of the child, till I have introduced it so far that the locking part is near the external orifice; this blade is to be kept perfectly steady until the other is applied. There is no necessity for feeling the other ear previously to the introduction of the second blade; it is sufficient that this is applied exactly opposite to the first; and it also is to be passed up between your two fingers and the head of the child, sliding rather than shoving it till the locking part of this blade is also near the os externum, and exactly corresponds to that of the other. Having proceeded thus far, pass your finger round the forceps to guard against including any skin or hair, and then lock them. If the blades do not lock easily, a little attention must be given to adjusting them*: when they are locked, the handles are to be compressed together, and a

* A rule given for the locking of the forceps is to "cross the handles on the same sides as the stops, till the blades cross each other; and then press the handles together: when they are locked, the stop will be felt on the outside of each blade."—See a paper entitled "Instructions to a Tyro on the use of the Forceps in Midwifery." Lond. Med. and Phys. Journal, September, 1820.

piece of tape or a bandage tied firmly round them to prevent their slipping. I will now suppose the forceps to be properly applied, when you must proceed to extract. This is to be done in the direction of the axis of the pelvis, which is a curved canal, the axis of the upper aperture being downwards and backwards, that of the lower downwards and forwards: the head must be drawn in the same directions, first downwards and backwards, and when it begins to distend the perinæum, downwards and forwards. Attention to these particulars is of great importance. It is commonly said that you are to pull from blade to blade, but if you do this only, the head will not advance in the slightest degree. You may pull till the sweat stands on your nose, and the nurse coolly says, "Had you not better wipe the perspiration off your face, Sir?" On the other hand, if you pull quite straight, the blades will probably slip off. You are to combine these modes by an action one third lateral and two thirds extractive. Thus, you first draw downwards and backwards with a motion partly lateral and partly extractive. You must not work constantly, but only during a pain, and desist when the pain goes off, and again extract when the pain returns: if the pains are weak and distant, you may renew your efforts for a minute or two between them. What force are you to use? Begin very gently, and gradually increase the force till you perceive that the head advances, when the same force steadily and carefully employed will gradually accomplish the delivery. A young man not finding that the head moves on his first efforts, and seeing the attendants, &c. in a state of alarm, is very likely to renew his attempts with haste and violence,

by which he might injure the child, and lacerate the perinæum. But there is no cause of alarm if the head does not descend in five minutes—never mind if it is even half an hour; the requisite force is often much greater than a young practitioner may expect; but the lower the head has descended, the less is the force required to extract it. As the pains recur, you go on extracting downwards and backwards, until the head begins to distend the perinæum, which then requires support, and all difficulty with the forceps is over. You now change the direction of pulling to that of downwards and forwards. One hand is at this time sufficient to manage the instruments, and with the other you must firmly support the perinæum, which most readily gives way at its extenuated margin. Extract with a steady and gentle force, so as not to injure the patient, constantly supporting the perinæum until the head is delivered. The forceps are now to be laid aside, and you are to wait for a pain to expel the shoulders and body as in a natural labour. To recapitulate the rules requiring your particular attention in the application of the forceps. First, The os uteri must be fully dilated, the membranes ruptured, and the head descended into the pelvis almost so low as to touch the perinæum. Second, The blades of the forceps must be applied one over each ear. Third, They must be passed up gently, not in the axis of the vagina, but in the axis of the *upper aperture* of the pelvis, upwards and forwards; and take care that the blades are so introduced that their locking parts correspond with each other. Fourth, Pull first downwards and backwards; but as soon as the head begins to distend the perinæum,

pull downwards and forwards, and take especial good care to support the perinæum. Fifth, Extract with a compound motion, partly straight and partly lateral.

Perhaps I dwell longer on the application of the forceps, and on the several cases which require them, than may at first appear necessary to you; but feeling, as I do, the importance of the subject, and the conviction that no man can practise this department of his profession with credit to himself and safety to his patients unless he thoroughly understands the use of the forceps, my apprehension is that I should rather say too little than too much.

When the head has descended so low as to touch the perinæum, and there remains stationary for twelve hours, a skilful practitioner will be justified in applying the forceps, even though the uterus still acts, and there are present none of the symptoms of injury from protracted labour. Some, however, might say, the interference would then be unnecessary; but of two evils choose the least, and I say that it is a less evil to employ harmless instruments unnecessarily, than to allow the near approach of symptoms which, when once established, may be beyond the reach of art. The author of the "London Practice of Midwifery" (which, though a nameless book, has been productive of benefit equal to its extensive notoriety,) states, that if in six hours after you can feel an ear the head is not delivered, you should apply the forceps. But here I beg to observe, that it depends on how these six hours have been spent, whether the head has been all this time perceptibly but slowly advancing, or whether the injuries resulting from protracted labour have begun to manifest themselves: in the latter case, the application

of the forceps ought not to be delayed one moment. When I say that you should not apply the forceps unless the head has descended into the pelvis, almost so low as to touch the perinæum, and has there remained for twelve hours, remember I am not speaking of cases of hæmorrhage or of convulsions, or of those in which there is danger of injury from protracted labour; but I specify this as the time you should wait when there is no particular reason for delivery sooner. Generally speaking, the os uteri will be fully dilated, the membranes ruptured, and the head descended low in the pelvis, long before the patient will suffer from protracted labour; but if unfavourable symptoms should arise before the head is so low as to touch the perinæum, and you are compelled to deliver, this may often be done by the forceps, without having recourse to the perforator, even though the os uteri should not be fully dilated. An undilated portion of the os uteri sometimes almost as effectually obstructs the descent of the head, as a slight projection of the sacrum; and this margin of the undilated orifice of the uterus is occasionally so very thin, that a careless observer might overlook it. This circumstance requires your particular notice; for it would be an unfortunate and irremediable occurrence were you to lacerate this portion of the uterus in the application of instruments. Be cautious in the use of instruments when the os uteri is not fully dilated, and never resort to them in this state of a labour unless compelled to do so, by some serious danger which is to be apprehended from delay. Many cases of this kind I could relate, but one shall suffice: — A lady whom I attended had been a long time in labour; the membranes were ruptured, but the

os uteri was not fully dilated: I left her to come to this theatre to lecture, vowing as I went along that I would apply the forceps when the lecture was over. On my return, I found the orifice of the uterus still undilated: I had reason to apprehend danger from any additional delay, and therefore immediately passed up my fingers on the child's head as far as I could, and between them and the head I carefully insinuated one blade of the forceps, opposite to which I introduced the other, and having locked them, I delivered her in ten minutes. When the head is situated high up, great force is sometimes required to move it. I once attended a case in the country, in which the force required was so great, that had it not been for the assistance of a surgeon, who was also in attendance, I should not have been able to have accomplished the delivery.

In cases of protracted labour arising from projection of the promontory of the sacrum, or other impediment preventing the descent of the head low into the pelvis, it will be proper to have recourse to the long forceps*, by the dexterous management of which you may sometimes be rewarded by bringing a living child into the world. These instruments are not to be employed without a careful consideration of the circumstances of the case, and a conviction of the propriety of their use: the management of them is much more difficult and dangerous than that of the short forceps; and

* The construction of those commonly used in France, called Baudelocque's forceps, with the improvement of Dubois, comprising forceps, blunt hook, and crotchet, is incomparably superior to that of any which are made in this country.

therefore it becomes the duty of a young practitioner, before he attempts to apply them, to weigh well his own competency for the undertaking. These forceps are to be applied in the long diameter of the pelvis; the head being high up, you cannot apply them accurately over the ears of the child: the blades must be passed carefully up the sides of the pelvis, and will probably grasp the head either diagonally, or from face to occiput: if the child's nose should be broken, this is not so great an evil as perforating its head and letting out the brains. It is an important question to determine in these cases, whether you will attempt the delivery by means of the long forceps, the vectis, or by perforating the head of the child. I was called one night to a woman who had been in labour about thirty-six hours; the midwife said the patient had a distorted pelvis, as the projection of the sacrum could be felt, and requested I would bring my instruments to open the child's head: when I came, I found she had a projecting sacrum, and that the os uteri was not yet fully dilated. I placed a pupil with her, with directions to send for me if the head did not advance within a certain number of hours after the os uteri was fully dilated. He sent for me at the expiration of the time specified: I succeeded in applying the forceps; the head did not at first yield to my efforts; at length it did, and I delivered her of a living child. This woman has been confined since, and the practitioner who attended her effected the delivery by perforating the head of the child.*

* I have known the long French forceps employed in two cases, at both of which I assisted, with success in each case, owing to a

(c.) On the Employment of the Vectis.

Some practitioners prefer the vectis to the forceps. There are different modes of applying this instrument. Some apply it over the occiput; others behind the ear, by which it has a bearing against the prominence of the mastoid process; and others against the chin. The two first are, perhaps, the best when the head lies high, as considerable force is required to move it; which may be employed with more safety against either the occiput or mastoid process than against the chin. But when the head is low down and resting on the perinæum, less force will be necessary, and the vectis may then be applied against the chin; but the instrument requires to be used with great caution, lest the jaw should be injured. You must never attempt to use the vectis when the uterus does not act; for it is a powerless instrument, and only adapted to cases in which the pains are rather languid than altogether deficient. Before introducing the vectis, you should ascertain, by examination, the exact situation of the part to which you propose to apply it. The curve of the vectis is of less diameter

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deformity of the pelvis; in previous labours it had been found necessary to open the head. In one of the cases alluded to, the long forceps, as they are generally constructed in this country, which were nine inches in length from the locking part to the extremity of the blade, were tried in the first instance, but failed totally. The life of one child was preserved; the other child was born in a state of asphyxia, from which it could not be recovered. The mother in each case recovered without any unfavourable symptoms.

than that of the blades of the forceps. You proceed to introduce it by first passing one or two fingers along the hollow of the sacrum, as far as may be practicable; between these fingers and the head of the child the vectis is to be cautiously insinuated; and when introduced, you may carry it around either side of the pelvis, and apply it to any part of the head. The name *vectis*, which signifies a lever, is not perfectly correct; because it implies, for the purpose of using it, the necessity of fulcrum. It is to be employed as a hook at the time of a pain: when introduced, you hold the instrument steadily with one hand, close to the external orifice, in order to preserve its situation; and when you work with it, you must not elevate the handle, for if you do, and make the pubes of the mother the fulcrum, the intervening soft parts will inflame and slough. This instrument is not so good as the forceps, but is more easily applied: it is quite useless when there are no pains; while with the forceps, which require only a very little more skill, even though there should be no pains, you can deliver in ten minutes. I have no faith in the vectis; it is proper only in a labour which is slightly retarded: if the pains are gone, there is the more need of assistance, and we can depend only on the forceps. When the head is retained in the upper part of the pelvis, if you try the vectis, you must place it on the occiput, so that its concavity may be applied to the convexity of that part, which will, in this case, be towards one or other groin: you are, however, to introduce the instrument along the hollow of the sacrum, and carry it round to the point against which you intend to act. Some practitioners are more expert than

others in the use of this instrument, by which a labour may certainly be accelerated, if it is employed in a careful and steady manner, provided the labour-pains continue.

(d.) On Craniotomy.

When the impediment to delivery is more considerable than that which has just been supposed, the evils of protracted labour will take place while the head is high up, before it has descended into the pelvis: here you cannot deliver with harmless instruments both to the mother and child, but you must sacrifice the life of the child in order to preserve that of the mother.

The cause of this kind of obstruction is generally a projection of the sacrum, as a consequence of rickets or mollities ossium, by which the short diameter of the pelvis is contracted; and in proportion to this projection will be the impediment. The head of the child is sometimes so large, that its descent is as effectually impeded as if there were a contraction of the pelvis; or there may be a large head with a slight contraction of the pelvis; and, in addition, there may be a feeble action of the uterus: each of these contributes to retard labour; and, collectively, they may make up a case of the greatest difficulty. I have already spoken of those cases of moderate impediment in which delivery may be accomplished by the forceps; I have now to call your attention to those cases of more considerable impediment, in which delivery can be effected only by diminishing the bulk of the head. In these cases the head will continue

to rest on the upper aperture of the pelvis, where the obstruction to its descent is such that, in order to accomplish the delivery, it is necessary to make an opening into it, which will permit the removal or escape of the brain. How are you to detect a deformity of the pelvis? Many persons suppose, when a woman has a deformed back and legs, that she has also a deformed pelvis; but this is a great mistake: I have known many a straight back joined to a deformed pelvis, and many a roomy pelvis in those who have had curved backs. Indeed, I may say that the back is generally straight where the pelvis is deformed. The first fee I received after I settled in London, was from a young man who was desirous of marrying a lady whose back was crooked, but feared to do so, having understood that pregnancy may be fatal to her. I told him not to be deterred by this apprehension, but to marry her, and when she fell in labour to send for me; which he did, and having a roomy pelvis, she was safely and easily delivered. You cannot tell whether the pelvis is deformed except by an examination per vaginam. If, in a common examination, you feel the promontory of the sacrum, rest assured there is deformity; for this cannot be done in a well-formed pelvis. If, notwithstanding, the pelvis is well formed, the pains strong, and the os uteri fully dilated, the head does not descend, the impediment most probably consists in the preternatural size of the child's head, which will also be suggested or confirmed by the peculiarity presented to the touch on an examination per vaginam. The bones in an hydrocephalic head feel as if separated by a membrane, the sutures appearing like extended fontanelles. In

this case, as well as when the pelvis is narrow, to deliver the woman we must diminish the size of the head by perforating it; but this should not be done so long as there is the slightest probability either of a natural delivery, or of delivery by the forceps. Suppose the pelvis is narrow, and we detect it at the commencement of labour, what are we to do? As long as the uterus is active, and the head advances in the most trifling degree, and the patient suffers no bad symptom from protracted labour, we must not perforate; but after twenty-four hours continued and regular action of the uterus, or after twelve hours from the full dilatation of the os uteri, though the pains continue strong, if the head remains stationary resting on the upper aperture of the pelvis, we are justified in proceeding to perforate; for there is no probability that the child will be expelled by any efforts of the uterus. But if any unfavourable symptoms appear, such as those formerly said to occur from protracted labour, or if the pains cease, the sooner we apply the perforator the better. It is difficult to give a precise rule which will be proper in all cases; but it may be said generally, that it is better to destroy the child, even unnecessarily, than allow symptoms to occur which will seriously endanger the life of the mother. My predecessor, Dr. Thynne, used to say, that you had better open six heads unnecessarily, than lose one woman, or let her go about with the cloaca of a hen.

Before we use the perforator, it is our duty to give the child every chance consistent with the safety of the mother, by the trial, if practicable, of the long forceps, or of the vectis. Supposing it, however,

settled that you must perforate the head, how will you do it? Previous to the introduction of the perforator, you place the patient across the bed in the same manner as preparatory to the application of the forceps; you then pass your whole hand into the vagina, and apply your fingers to the head of the child, and feel for a suture where the perforation will be made the most easily; but if you cannot feel a suture, or fontanelle, you may proceed to perforate the middle of the presenting part of the head. The perforator must be passed up along the palm of the hand which is in the vagina; but before making the puncture *you must take especial care that there is no undilated portion of the uterus in the way;* this being *ascertained*, you push the perforator with firmness into the head up to the stops; then open wide the handles, or direct an assistant to do it, by which the bones will be separated in one direction, then turn the instrument and separate the handles in the same manner as before, so as to lacerate the parts of the cranium opposed to each blade in an opposite direction. Having thus made a considerable opening in the skull, you break down the brain with the perforator, by turning it round and round in every direction: this being done, the longer you delay the extraction the less force will be necessary, as the brain will be gradually forced out, and the bulk of the head diminished by the compression it will afterwards suffer. In delaying the extraction after the skull is opened, you will be guided by the state of the patient: if there is no urgent cause for delivery, you will render the subsequent part of the operation more easy by waiting a short time; but if peritoneal

or vaginal inflammation, or constitutional exhaustion should be present, or even apprehended, the extraction should not be delayed. In order to accomplish this the crotchet (if this instrument is employed) is to be passed into the opening of the skull made by the perforation, and some firm hold is to be felt for where it may be securely fixed: you must take great care that it does not slip during the process of extraction, for if it does it may produce a frightful laceration. It is a diabolical instrument: even in the hands of the best practitioner it is a dangerous one. I never myself met with any accident in the use of it, not because it did not sometimes slip, but because I chose rather to lacerate my hand than my patient's vagina. I shall never use it again; but instead of it, an instrument somewhat resembling lithotomy forceps, rather larger and longer, with teeth at the extremity of each blade, by which the hold is rendered very firm. You pass it closed up the vagina, and when it arrives at the opening in the skull the handles are separated; one blade is introduced within the opening, the other is on the outside, and closing the handles you grasp a portion of the skull. The extraction is to be made carefully, at first downwards and backwards; but when the head presses on the perinæum, downwards and forwards, if the bone which is grasped by the forceps gives way, extract it, and grasp another portion. This is an old instrument, the invention of which is claimed by Lamotte. In cases of great deformity of the pelvis, you cannot extract all the bones of the head together, you must then pull away each bone separately: after having thus taken away the frontal, parietal, occipital, and tem-

poral bones, nothing of the skull remains but the base: experience has shown that the delivery will now be best accomplished by converting what remains of the head into a face presentation. If there should be an impediment to the passage of the body, the thorax must be opened, as this may be distended with fluid. The abdomen may also be distended either by fluid or air; this also is to be punctured, if necessary, when the remaining parts will pass easily. Hydrocephalus is not a very uncommon disease while the child is in the uterus, but hydrothorax or ascites is rare.

(e.) On Artificial Premature Labour.

In cases of great deformity of the pelvis, the child in utero, if it attains its full growth, must be destroyed; but if the patient falls in labour six weeks before the full period of gestation, experience has shown that the woman may be delivered safely; and the child, though prematurely born, will oftentimes live. From this observation the practitioners of midwifery have been led to consider the propriety of bringing on premature labour artificially, and the results of experience have been so far favourable to this proposition, that the practice may be said to be an established one in this country.* The principal questions are, at what time, and in what manner, is labour to be artificially induced? If this is done at six months, the child is small enough to pass through the pelvis,

* See Cases of premature Labour, artificially induced for distorted Pelvis, with Observations, &c. by Dr. Merriman. Med. Chirurg. Trans. vol. iii. p. 123.

but too young to live. At eight months it is old enough to live, but most probably too large to admit of easy delivery, What then is the period at which the child may be small enough to pass through the pelvis, and yet large enough to live? "experientia docet." The answer is, at the completion of the seventh month: fix on that period; reckon seven calendar months and one week from the time of the last menstrual discharge, and then bring on premature labour. If the deformity is very considerable, the child may, even at this time, be too large to pass. It is difficult to ascertain the exact measurement of the pelvis, but it may, in some degree, be guessed at, by the facility or difficulty with which the body and limbs of the last child were extracted after opening the head. If, however, you could get the measurement of the pelvis, you cannot get that of the child's head. This operation has been performed but once on the Continent, and then it did not succeed. The Continental practitioners are as reluctant to induce labour artificially, as we are to perform the section of the symphysis pubis. Although then it cannot be said that the plan of inducing labour artificially is an infallible one for preserving the life of the child, still it affords a probability of this success; at all events it will render the labour more easy, and less dangerous to the mother.

The methods of performing the operation which will be followed by labour, are two. The common one consists in puncturing the membranes with a male or female catheter; if the male catheter is chosen, it must be made straight before it is used. Place the patient near the edge of the bed in a proper position,

introduce your finger up to the os uteri, carry the catheter up on your finger, and with great care insinuate it through the orifice of the uterus; press it onwards and puncture the membranes: when the water flows, withdraw the catheter and leave the patient. The liquor amnii will come off slowly; and after some hours, generally between twenty-four and forty-eight, though in some cases it may be three, four, or five days, the uterus will act. As the liquor amnii drains away, the sides of the uterus collapse on the hard substance of the child, uterine action commences, and goes on to the expulsion of the child.

The second method of inducing premature labour is to pass the hand completely into the vagina, and introducing your fore-finger gradually through the os uteri, peel off the membranes all round the cervical portion of the uterus; after which, it is found that the expulsive action of the uterus will generally come on in about forty-eight hours. The advantage of this method is that you have the unruptured membranes to dilate the os uteri, and the liquor amnii to defend the head of the child. If premature labour does not come on in two or three days from the separation of the membranes from the neck of the uterus, you must have recourse to the first-mentioned operation of puncturing them.

Foreigners are exceedingly afraid of this operation; and certain it is, that great disturbance of the nervous system is produced by it; severe rigors, rapid pulse and delirium are the occasional consequences, but these symptoms, proceeding from nervous irritation, do not continue long enough to produce any serious consequences: they sometimes cease as soon as the

pains commence; and if not then, they cease after the uterus is emptied. About nineteen children have been thus prematurely born, and afterwards reared in this country. This practice, therefore, gives a chance of preserving the life both of the mother and child.

No case can occur, the management of which will be so difficult as that of an arm presentation with deformity of the pelvis. This combination of circumstances has proved too much for the skill of the most experienced practitioners.

(f.) Section of the Symphysis Pubis.

This operation has been recommended in deformity of the pelvis, as a mode of facilitating the birth of the child. The objections against it are decisive. If you divide the symphysis pubis by an incision through it, you will find that you do not increase the diameter of the pelvis, in the direction in which it is contracted, which is generally from sacrum to pubes. The room which this operation gives is in the lateral direction; you therefore gain no increase of the capacity of the pelvis, where it is chiefly required. Further, the bones after being thus divided may not unite; and the bladder is liable to be injured. The operation has been performed in this country but once; and in that case, strange to say, it succeeded: but, in ten days afterwards, the woman died, not from the operation, but from drinking porter and brandy.

(g.) The Cæsarean Section.

This operation is performed only when the deformity of the pelvis is so great that even after perforating the head, and removing the bones of the cranium, there is not sufficient space for the extraction of what remains of the child. If such a deformity is known to exist, no advantage would be gained by opening the head, as the Cæsarean operation must afterwards still be resorted to, which if the head had not been opened would have afforded an equal chance to the life of the mother, and would probably preserve that of the child. On the Continent they prefer resorting to the Cæsarean section, or to a division of the symphysis pubis, to any mode of delivery which necessarily involves the sacrifice of the child. But English practitioners, impressed by the danger to which the mother is exposed, never recur to the Cæsarean section, unless under circumstances which must otherwise be alike fatal both to the mother and child. The operation has been performed in this country about thirty times, and in no single instance has the woman recovered. There is a case in which the mother is said to have survived the Cæsarean section, related by Mr. Barlow in the Medical Records and Researches. He cut through the parietes of the abdomen, and then came, as it was supposed, to the uterus, which was no thicker than the peritoneum. This I conceive was no uterus at all. It must have been an extra-uterine fœtus, or the fœtus had escaped by a rupture of the uterus.

The method of performing the Cæsarean operation

is this:—Take the woman out of bed; lay her on a table, with her shoulders a little elevated; make an incision six inches in length through the abdominal parietes: it is recommended by some to make this incision through the linea alba; by others, transversely, from the linea alba to the left side. The greater length of the opening must be made below the umbilicus, and the place of the incision must be determined as circumstances indicate; for sometimes the uterus is displaced by the deformity which renders this operation necessary. Having laid bare the peritoneum, you open it to the whole extent of the external incision; the uterus is then exposed to your view, through the side of which, commencing at the fundus, you make an incision of sufficient extent to enable you to remove the child; this being done you separate and take away the placenta; the uterus presently contracts and sinks into the pelvis, out gush the bowels through the wound, this must be prevented if possible by an assistant, but if the intestines do protrude they must be carefully returned; the external wound is to be closed by sutures (avoiding the peritoneum) supported by straps of adhesive plaster, a compress and bandage. If any vessel is wounded during the operation, the bleeding from which may be troublesome, it should be secured by ligature. If a woman dies suddenly in the latter periods of pregnancy, by performing the Cæsarean operation the child may be sometimes preserved. Cases are on record in which living children have been thus extracted: in one instance the child was taken alive from the uterus when the mother had been dead nearly half an hour. This formidable and truly dangerous operation being

over, and the woman again placed in bed, the practitioner now on looking at his patient finds her much altered; her countenance is sunk, her pulse quickened, and her respiration hurried — effects of the impression made on the general system by an extensive wound in an organ so important as the uterus; the nervous system has not energy to sustain so violent a shock, and in a few hours the patient dies.

Although on the Continent instances are said to occur of the success of this operation, yet it must be confessed that in general it terminates fatally. In one case the width of the pelvis was two inches and a half, and the patient died in three days after the operation. In England we should have perceived there was sufficient room for extracting a dead child; we should therefore have opened the head, and saved the mother. Suppose you have opened the head, and cannot afterwards extract the child, how are you to act? Practitioners frequently declare that the child cannot pass, yet in many cases, with dexterous management, its delivery may be accomplished. Dr. William Hunter says, in such cases a very little additional space will suffice for the delivery, which may be given by dividing the symphysis pubis; but this is a most deplorable alternative, and I scarcely know whether this, or the Cæsarean section deserves the preference.

Section II. *On Preternatural Presentations.*

The child in utero is generally so placed that its head is downwards, or "*presents*," as it is termed. But this position, though so common that practitioners

rarely expect any other, is not invariable. Preternatural presentations are those of the feet, breech, and arm; writers on midwifery describe others, as of the shoulder, and knees; but these are only modifications of the arm and feet presentations. Presentations of the back and belly are also spoken of, but Dr. Wm. Hunter did not believe them to be possible; the presentation of the belly has, perhaps, been erroneously inferred merely from a presentation of the funis. If we know how to manage the three first deviations from the natural position of the child, we know how to manage all.

(a.) On the Presentation of the Feet.

Although you may sometimes suspect this presentation from perceiving an elongated tumour instead of the hard and round head, yet it cannot, in general, be ascertained until the os uteri is somewhat dilated, and the membranes ruptured. Every part of the child which can present has some distinguishing characteristic; thus the hand has a thumb, and the foot a heel. In a foot-presentation, the expulsion of the feet, breech, and umbilicus may be left to nature, but after the umbilicus is expelled, the funis will suffer compression, and the child may die from asphyxia, as we should do from pressure on the trachea. Whether, therefore, the child is to be born alive or dead, will depend upon the time occupied in accomplishing the remaining part of the delivery. As the natural process of expulsion is commonly, in this stage, tardy, the delivery of the arms, breast, and head must be facilitated by manual aid. The head should be in the most favourable position for its descent and extrac-

tion, with the face to one sacro-iliac junction, and the occiput to the opposite groin; as it descends, the face turns into the hollow of the sacrum, and the occiput to the pubes. Remember, when the feet are protruded, to inform yourself in what way the head is coming down; this you will know by the position of the toes, for the face is in a corresponding direction. If, therefore, the toes are turned in the wrong direction, as towards the pubes, wrap a napkin round the feet, and as much of the child as you can, and gently turn them to the nearest sacro-iliac junction. If a pain comes on you must desist, for the child is then firmly grasped by the uterus; you must attempt this change of position only between the pains. The child being thus favourably placed, let nature expel the umbilicus: when this is accomplished, pull down a loop of the cord a little way, for if the funis be only straightened, it is as hurtful as compression; and then begin to extract, in which there must be no unnecessary delay, as the child will be dead if it is not now born in a few minutes. Compression of the cord is generally indicated by a convulsive action of the body of the child. When the umbilicus is expelled, I say, Nature! you have done your work; I must now begin mine—so I grasp the breech with a napkin, and proceed to extract carefully, but as fast as I can, working from hip to hip. As soon as the body is born, bring down the arms; pass up your finger from the shoulder to the elbow, and pressing it towards the chest, bring down the fore-arm, making it sweep over the face; lift up the body of the child, and extract the other arm in the same manner; the arms being brought down, pass up one or two fingers on the breast of the child, and introduce them into its mouth; press the chin

down to the breast; with the other hand raise the child towards the pubes of the mother, extracting at the same time in the direction downwards and forwards: the delivery will thus be readily accomplished.

(b.) Breech Presentation.

If the membranes are entire, you may at first mistake this presentation for that of the head: if the membranes are ruptured, you will generally find your fingers, after an examination, soiled with meconium, but this is not an infallible sign; if, however, your fingers are soiled with meconium, and the presenting part gives the sense of a soft round tumour, most probably it is the breech; you will also distinguish the organs of generation, and frequently you may pass up your finger and feel the groin. The efforts of nature are, in general, sufficient to accomplish the delivery in cases of breech presentation. The breech may, however, if the action of the uterus is weak, remain in the pelvis for twenty-four hours; still it may be left to nature, if it advances, though ever so slowly. When the breech is low down, we have it in our power to render assistance, not by instruments, but by passing one or two fingers of each hand into either groin, which will enable us to use, with perfect safety, any degree of force which may be requisite: the blunt hook, which is sometimes recommended, should not be used unless circumstances render it indispensable; for, unless employed with great caution, it will abrade the skin, or may even fracture the bones of the child. A soft handkerchief, when practicable, may be introduced over the groins; you then have both ends to pull at, by which you can command great power of extraction. Remember to observe whether the breech

is towards the pubes; if not, turn it, so that the face may be towards the sacrum. It is not necessary to bring down the feet, on the contrary, it is better to allow the lower extremities to descend doubled on the body until they are free of the external orifice, when the breech presentation becomes converted into a footling case, and requires the same management. The extraction of the shoulders and head should be made at the time of a pain, which may be sometimes excited by gentle friction above the pubes.

When the pelvis is narrow, and the breech is obstinately retained, you may use the forceps, as in the head presentation: but the parts over which they are applied being soft, the blades will be very liable to slip; or the blunt hook may be passed carefully up into the groin. If the impediment to the descent of the breech is trifling, it may be overcome by the use of the blunt hook, or by the force which may be exerted by the fingers passed into the groins of the child. If deformity of the pelvis, in a case of breech presentation, is known to exist, it will be proper to bring down the feet as early as may be practicable. The deformity which impeded the descent of the breech may perhaps prevent still more effectually that of the head. The delay occasioned by an impediment of this sort will be fatal to the child; nevertheless, you cannot employ with impunity any degree of force for the extraction of the head; for it is possible that the body, by such force, may be brought away, while the head is left in the uterus.*

* This rare accident is occasioned by improper violence, most commonly, when putrefaction of the fœtus has already commenced. The chief difficulty in extracting the head from the uterus, when separated from the body, arises from the difficulty of fixing it; this should be done by the hands of an assistant on the outside of the patient's abdomen: the head is next to be opened by the perforator in

All other means of extraction having failed, it becomes necessary to have recourse to the perforator, and to open the head: this you do behind the ear, or in the most eligible part the nature of the case will admit of; when with such moderate extractive force as the body and limbs will sustain, or by means of the crotchet or hook passed into the aperture of the skull, the delivery of the head may be accomplished. Great attention must be paid, during this process, to the safety of the soft parts; and that of the perinæum must be particularly remembered at the time of extraction.

(c.) On the Presentation of the Arm.

When the shoulder or arm presents, the child lies across the pelvis; and, as long as this position continues, delivery is impracticable. The arm may be readily distinguished by feeling the hand and fingers; but the shoulder is not at first so obvious, being liable, from its softness, to be mistaken for the breech. By a careful examination, however, a mistake of this sort may be easily corrected; for you may distinguish the scapula, part of the neck, axilla, or arm. The shoulder is less round than the breech: there is an absence of the genitals, and of the tuberosity of the ischium; and the fingers will not be soiled with meconium. As the child cannot be delivered when the arm presents, for the reason that it lies across the pelvis, so it becomes necessary that this position should be changed, which is done by the operation usually called turning. Ambrose Paré, the celebrated French surgeon, has the merit of bringing this method

the most convenient situation, and the crotchet, or Lamotte's forceps, should be introduced into the opening, by which the rolling of the head will be prevented, before the perforator is withdrawn. The delivery is then to be completed, as directed under the title "Of Craniotomy."

into general practice. At what period of labour, and in what manner, is the operation of turning to be performed? If you choose the time when the os uteri is but little dilated and the membranes entire, the hand may be passed into the uterus; and, the membranes being ruptured, the child will be turned with as much facility as if in a bucket of water: but in this early stage, the os uteri being imperfectly dilated, will probably grasp the head, and so delay its descent, that the life of the child will be lost. When the os uteri is fully dilated, and the liquor amnii has escaped, you may easily pass up your hand; but much difficulty and danger will attend the operation of turning. At this time the uterus will be stimulated to vigorous contraction, and it may suffer a laceration which will prove fatal to the patient. If the os uteri is fully dilated, and the membranes are not yet ruptured, your object may be accomplished with great ease: you introduce your hand and rupture the membranes; your arm plugs up the vagina, and prevents the escape of the liquor amnii; and you may then turn and extract under the most favourable circumstances. This is the time we should prefer; but we are not always favoured with a choice. It may be a question, in some cases, whether you should wait for the complete dilatation of the os uteri, by which you will incur the risk of a rupture of the membranes. If the os uteri is opened to the size of a crown piece, and at the same time feels soft and dilatable; if the vagina and os externum are relaxed; and if also it is not the first child; —under these circumstances, it would be proper to introduce the hand, dilate the os uteri, rupture the membranes, and proceed to turn, rather than hazard

the escape of the liquor amnii before this operation is commenced. When the os uteri, vagina, &c. are rigid and unyielding, some delay will be advisable, provided there are no urgent symptoms requiring a speedy delivery; and when the os uteri is but little dilated, the practice of turning is highly objectionable. If the membranes are ruptured after the labour has made some progress, no time should be lost in bringing down the feet; for the water will not all be evacuated at once, but by the continuance of the pains; and, as the water escapes, the child becomes more firmly embraced by the contracting uterus. When the action of the uterus is very violent, it is sometimes recommended to take away twelve or sixteen ounces of blood from the arm, to diminish its powers: this is seldom necessary; but it is very desirable, before you attempt to turn, to render the uterus less active, by giving a large dose of laudanum: the presence of the hand in the uterus will, otherwise, excite an almost uninterrupted contraction: during these contractions the hand must be laid flat, and the action of the uterus thus suffered to expend itself; but this action is renewed the instant you raise your knuckles. Seventy or eighty drops of laudanum should, therefore, be given; this begins to produce its effect in about twenty or thirty minutes; in three quarters of an hour, the contractile efforts of the uterus will be so much diminished that there will be a temporary suspension of the pains; and this is the favourable opportunity which you are to embrace for accomplishing the delivery.

After smearing the back of the hand and fingers with lard, the fingers are to be formed into a cone,

and thus the hand is to be introduced through the vagina into the uterus, dilating the parts in its passage gently but perseveringly. It is of importance in turning, that the hand should be carried up in the direction of the feet of the child: some practitioners are negligent of this advantage, and then have to seek for the feet while the hand is in the uterus. The danger of lacerating the uterus is very great when the membranes are ruptured, and the liquor amnii has escaped; the parietes of the uterus are then firmly contracted on the child, and the slightest inequality of pressure against it will sometimes be sufficient to cause laceration. Never, therefore, proceed in the operation of turning during a pain: when the uterus is contracting act with caution, always lay your hand flat until the pain is over, and resume your efforts during the interval of its recurrence. Which hand will you employ? and how are you to know in what direction the feet lie, so that on introducing the hand you may immediately find them? The feet of the child are on the same side of the uterus as its belly; if, therefore, the back of the child is towards the mother's belly, use your left hand; if the belly of the child is towards the belly of the mother, use your right hand. By observing the position of the child's hand, you may ascertain this: the back of its hand is on the same side as its back, and the palm on the same side as its belly. If the child's back is towards the mother's belly, and you introduce your right hand into the posterior part of the uterus, the grasping side of your hand will be towards the mother's spine, and the back of your hand against the feet of the child; and if you pass it into the anterior part of the uterus,

you will find nothing but the child's back: but if, in this relative situation of the child, you pass your left hand into the posterior part of the uterus, the feet will come immediately within its grasp. If the palm of the child's hand is towards the mother's belly, so will be its belly and feet. In this case, if you introduce your left hand, on arriving at the feet the palm, or grasping side of the hand, will be towards the surface of the uterus, and the back towards the feet of the child; but if you introduce your right hand, on reaching the feet the grasping side of the hand will be towards them. The rule, then, for the employment of either hand in the operation of turning is this: — If the palm of the child's hand is towards the abdomen of the mother, you are to pass up your right hand into the anterior part of the uterus; if the back of the child's hand is towards the belly of the mother, you are to pass up your left hand into the posterior part of the uterus. In every turning case you are to introduce your hand by the side of the presenting part; as the feet are brought down, this goes up. If both feet cannot be readily grasped and brought down together, bring down one first, and then the other; and in the progress of extraction, remember to attend to the direction of the axis of the pelvis. Dr. Thynne was called to a case in which the attending practitioner could not turn; the failure arose from his having attempted the operation only with his right hand when the back of the child's hand was towards the mother's belly. Dr. Thynne introduced his left hand, and turned the child with facility.

Sometimes when the hand or shoulder presents, the head rests on the edge of the brim of the pelvis;

and if you return the presenting part, the uterus is so stimulated to a vigorous action, by the introduction of the hand, that the head is thrown off the brim of the pelvis, and descends as in a natural presentation. I have succeeded in this way in many cases, and in some to which I was called for the express purpose of turning: while apparently only making a common examination, I have returned the presenting part, and then waited for a pain, which has brought down the head. I have then desired the attending practitioner to examine, and he has been surprised to find that the arm was converted into a head presentation. On one occasion when the arm presented I pushed it up, and down came the funis, which I carefully replaced; the uterus immediately contracting forced down the head, which of course continued to be the presenting part until it was expelled. In arm presentations, when the body of the child is completely across the pelvis, you must turn and deliver; but if the head is only a little removed from its natural position, then return the hand, in the hope that the head at the next pain will assume its place. Two queries here suggest themselves: the first, If when the head is but little removed from its natural position, the labour were allowed to proceed without interference, would not the position of the child become transverse relatively to the pelvis, as the arm was forced lower into the vagina? The second, If an arm presentation were detected in a very early stage of the labour, would it not be found that the head was always only a little removed from its customary position?

It has been asserted by some writers when the arm at first presents that this recedes, and the breech takes

its place; this is called a spontaneous evolution. Dr. Denman stated that the breech is made to descend, and at the same time the arm goes up, by the continued action of the uterus. In proof of this fact, he published several cases*, together with the inference that arm presentations may be entirely left to nature: this conclusion was, however, invalidated by his subsequent experience. Dr. Douglas denies this change of position altogether: he observes, that when the arm and shoulder are pushed under the arch of the pubes additional space is gained at the back part of the pelvis, the breech is forced down, distends the perinæum, and the child is born double. This I consider the more correct explanation.† Whatever may be the nature of the process, it is one we should never be justified in waiting for; the delay must be extremely hazardous to the mother, and almost certainly fatal to the child. If it should be ascertained that this change of position has already commenced, you may wait and observe its progress: in all probability the labour will be accomplished by the powers of nature, if the action of the uterus continues. In the earlier stages of pregnancy, when the child is small and flexible, its expulsion in this way will be attended with comparatively little danger or difficulty. It is satisfactory to know, when the operation of turning is impracticable (which must be a rare dilemma to one who understands his business), that by the continued action of the uterus the child may possibly be born by that which is called its spontaneous evolution.

* Vide Lond. Med. Jour. vol. v.

† See a paper on this subject by Dr. Gooch, Med. Transactions of the College of Physicians, vol. vi. p. 230.

(d.) Presentation of the Funis.

Before the membranes are ruptured, the funis, when it presents, feels like a ridge extending across the os uteri. You will, most probably, not recognise the funis in this stage; but, when the membranes burst, the liquor amnii escapes, carrying with it the cord into the vagina. When this occurs, the labour is attended with danger to the child, but not to the mother; for if the funis be compressed, the child suffers asphyxia. As the head descends, the circulation through the cord is impeded; and if the child is long in the passage it will be still-born. How are we to act? We are not justified in any measure the object of which is to preserve the child which will endanger the life of the mother. Do what you will, it is most probable the child will be lost. There are three modes of treatment proposed: first, to turn the child and deliver; secondly, to return the funis, and keep it up, till the head descends, which will then effect the latter purpose; thirdly, to apply the forceps. If we detect a presentation of the funis, when the os uteri is nearly dilated, the membranes entire, and the parts in a relaxed state, no one would here hesitate to turn and deliver, as it may be done with ease and safety; and it will be best in this operation to employ the left hand, as the feet will, most probably, be in the posterior part of the uterus. If you attempt to turn under less favourable circumstances, nothing will be gained, for the delivery will be protracted, the life of the child consequently lost, and that of the mother placed in some danger. But suppose the os uteri dilated,

the membranes ruptured, and the head, with the funis before it, descending into the pelvis, if possible, endeavour to return the funis, and keep it up until the head descends beyond it by a continuance of the pains. You may push up the funis by the side of the head with your fingers; but it requires to be kept there during several pains. I once had a funis presentation, when the life of the child was of great importance; I took a sponge and pushed it up after the cord into the uterus, the sponge being of a large size kept up the cord, and the head descended properly. You may carry up the cord and hang it on a limb if practicable. On the Continent they place the descended loop of the cord in a bag, in which it is pushed up beyond the head; and, when once up, the bag is too large to permit its descent. If the membranes are ruptured, and the head is descending rapidly, nothing can be done; but if the head is low down, and descending slowly, apply the forceps immediately, if other circumstances are favourable. If the funis has been down so long as to have become flaccid and destitute of pulsation, the child is dead, and the labour is to be left to nature.

There are three deviations from natural labour requiring the interference of art: the first is, that in which the child is properly placed in utero, but its expulsion is slow or impeded; in the second, the child is placed unnaturally in utero; in the third, the child is placed naturally, and no impediment may oppose its expulsion: yet there are some untoward circumstances which render the labour complicated and dangerous. The two first deviations have been spoken of, and I next proceed to treat of the last.

Section III. *Of complicated Labour.*

(a.) Of Puerperal Convulsions.

These may take place either during labour, or a few hours before labour commences; after the labour has terminated, or some months before its expected occurrence. The disease is characterised by insensibility, accompanied by convulsions, in connection with the puerperal state. The attack is preceded by symptoms of determination of blood to the brain; as giddiness, headach, and singing in the ears; sometimes sparks of fire seem to flash before the eyes, the mind wanders, and the vessels of the neck and face are turgid, the face is swollen, there is an irritation about the præcordia, sickness, and pain in the stomach, making a combination of symptoms from which much danger is to be apprehended. The fit is often accompanied with a slow pulse, which sometimes sinks as low as fifty in a minute just before its commencement. The convulsions are generally preceded by some, or all, of these symptoms; but they sometimes occur without being preceded by any of them. During the attack the eyes are turned upwards, the eyelids quiver, the mouth is drawn to one or other side, and twitched spasmodically; frequently the tongue is thrust out, there is foaming at the mouth, and the countenance is frightfully distorted; the respiration is performed with a hissing noise, and the whole body is violently convulsed. This state continues for perhaps a few minutes, and then subsides; during the interval of the convulsions, the patient is generally insensible, lying quiet and motionless in a state of stupor; sometimes she awakes from her

stupor, and complains of pain in her head or spine, gets up in bed, and looks wildly about. If she is questioned, she shows no consciousness of what has occurred; after a time, which is uncertain, varying from a few minutes to two hours, the symptoms just mentioned are renewed.

If convulsions take place before labour commences, though the patient be only in her sixth, seventh, or eighth month of pregnancy, it is generally found that contractions of the uterus begin, and labour quickly follows. These alarming symptoms may occur a few hours after the labour has commenced, which advances in consequence more rapidly: the child is very soon expelled, and apparently without pains. Sometimes, as soon as the child is born, and the uterus empty, the symptoms just described cease, and the patient goes on favourably. But this is not always the case; experience shows that both the convulsions and the stupor may continue to succeed each other after the uterus is emptied, with little or no abatement. The convulsions may even commence after the labour is entirely over. This puerperal disease differs from epilepsy at least inasmuch as it is excited by uterine irritation. Nothing has been found on examination after death, in some instances, to account for the fatal termination of this disease; in other instances, there has been a considerable turgescence of the vessels of the brain, effusion or extravasation.

There are two classes of females particularly liable to puerperal convulsions; — the plethoric, and the irritable: the irritability which disposes to them is common among fashionable ladies, whose nervous systems are often very susceptible. Depressing passions of the mind frequently produce this complaint;

unmarried women, who have passed the latter months of pregnancy in solitude and wretchedness, are very likely to be attacked with it; and it is found in lying-in hospitals which admit unmarried women, that a large proportion of cases of puerperal convulsions occur among females of this class. The conclusion to be drawn from this difference in the origin of the complaint is this: — Where there is preternatural susceptibility of the nervous system, we must, if possible, sooth it; where there is plethora, we must empty the vessels. The remedies commonly recommended are, antispasmodics, bleeding, and delivery. The first, general experience shows to be useless. Hamilton says opium is pernicious; bleeding is then our sheet-anchor, in whatever class of patients the disease may occur; and to be efficacious, it must be employed boldly and speedily, and to a greater extent than is generally imagined. In a case of this kind the patient was bled with no apparent benefit, for the convulsions continued; but during a fit the bandage slipped from the arm, a great quantity of blood was lost, and the convulsions then ceased. This case is related by Dr. Denman; and it seems to be the first which suggested or confirmed the benefits to be derived from copious bleeding: he says fifty, sixty, or seventy ounces of blood, may be cautiously taken away. Dr. Hamilton says, take away forty ounces at once; and if in two hours the patient is not satisfactorily better, take away forty ounces more. When I heard Dr. Hamilton, in his lectures, deliver these instructions, I felt not a little astonished; but I can now conscientiously declare, that I have never had a patient die of puerperal convulsions when the disease

has been thus boldly treated; those who have died have been bled with a sparing hand, and to an insufficient amount. A little woman about eighteen years of age, of a spare habit, was seized with pain in her head, and trembling, on which she fell down senseless: I was sent for, and soon after my arrival she became convulsed. This was the first case of the kind I had ever seen; and though the patient was not of a plethoric habit, I bled her to the amount of twenty ounces: before the bleeding was stopped she opened her eyes, and the convulsions ceased. I ordered her head to be shaved, directed cold applications to the scalp, and a dose of sulphate of magnesia, with infusion of senna, to be given every three hours till the bowels were well cleared. Notwithstanding the favourable impression produced by the bleeding, which was followed by the action of the purgative, in a short time the convulsions returned; the bandage slipped off, and she lost about eight ounces of blood. The husband tied up her arm, and in great haste ran for me without his hat and with his hands covered with blood: I went immediately, and took away twenty ounces of blood more, and the convulsions ceased, but still the patient remained insensible. I left her, directing the black dose to be continued: at ten o'clock at night I went to see her again, and just before my arrival she had a convulsive fit, more violent than any preceding one. She had, since nine in the morning, lost forty-eight ounces of blood, and still remained much the same: I now again bled her to the amount of thirty ounces; the convulsions ceased; in the morning she was decidedly better; in the course of the day uterine pains came on, she was delivered of a dead child, and gradually recovered. She had

afterwards no recollection of the fits, or of any events which had occurred during some weeks previously. I could tire you with the relation of cases successfully treated in this manner, in which we took care of the convulsions, and left the uterus to take care of itself. With regard to the third remedy, delivery, the introduction of the hand into the uterus, from the irritation which it occasions, does more harm than is compensated by the benefit derived from emptying the uterus; for although this is done, the convulsions often continue with undiminished frequency and violence, and the patient is also insensible during the absence of the convulsions. Though there may be no labour pains, yet on examination you will often find the os uteri fully dilated, sometimes the membranes ruptured, and the head descended low into the pelvis: here, if you deliver, apply the forceps, but do not omit bleeding, and that copiously; if you do, the delivery alone will not be sufficient to preserve the life of the patient. Give me the lancet, and deprive me of all other remedies, and I will do more good with it singly, than with all others, deprived of this, put together.

Puerperal convulsions may occur at the sixth or seventh month of utero-gestation: when they happen at this period they may be cured by judicious treatment, and the woman will sometimes go her full time; but if she does, the child will generally be dead: the treatment is bleeding to a great amount, together with purgatives. In cases of puerperal convulsions, the os uteri being fully dilated, and the membranes entire, you may turn and deliver, as it may now be easily effected; but if the os uteri is not already

sufficiently dilated, the irritation occasioned by forcibly introducing the hand will be very dangerous. Deliver when circumstances permit this to be done with facility, but do not neglect bleeding. A pregnant woman was seized with convulsions; the nurse, believing her not to be in labour, sent for an apothecary: he thought the patient was in hysterics, and gave her assafœtida; not getting better, another practitioner was sent for. On examining, he found the os uteri fully dilated, and the head low down in the pelvis: he applied the forceps and speedily delivered her, but the lancet was not used, and she died. Thus they took care of the uterus, and gave but little attention to the convulsions. A pregnant female, suffering from syphilis, was admitted into St. Bartholomew's Hospital, and whilst there was attacked with puerperal convulsions: a student bled her to about twenty ounces; the convulsions recurring, he sent for me. I bled again, and took away thirty ounces more. I had my finger on her pulse, and felt it flutter as if she were about to faint; she immediately opened her eyes, asked what we were doing, and fainted. It was curious to remark the change which took place in the brain; passing from that of stupor, under which it was labouring during the interval of the convulsions, to its natural state, and immediately falling into that of syncope. The convulsions never returned, but the next day she was quite blind; the pupil contracted and dilated on the admission and exclusion of light from a candle. The scalp having been previously shaved, I ordered her to be cupped on the head to the amount of twelve ounces; this relieved her blindness. Some practitioners recommend emetics in this disease; but it is very difficult to get any

thing into the stomach. Dr. Denman recommended sprinkling the face with cold water before the convulsions begin; but the better way would be to place the head of the patient over a tub, and pour cold water upon it. Dr. Denman relates cases of sudden death from puerperal convulsions, when no convulsion was present to occasion it: the nature of the disease, I presume, was not in these cases correctly distinguished. After death from puerperal convulsions, he has found the auricles and ventricles of the heart empty. He states that this disease is likely to be followed by peritonitis, and that we should watch our patient carefully for the first fortnight after delivery, in order to attack this complaint on its first approach. The truth of this remark is exemplified in the following case: — A lady had puerperal convulsions, the accoucheur who confined her called me in, and, by bleeding, the disease was cured. About four days afterwards I was sent for again, not for any thing my head could suggest, for the patient was moribund, but in order that my shoulders should bear the responsibility of the case. She had been attacked with peritonitis, her belly was much swollen and tense, and she very soon died; the lancet had not been used, she had taken no purgative medicine, and had no evacuation for seventy-two hours. Camphor has been much recommended in puerperal convulsions, in doses of five or six grains every three or four hours.

(b.) Of Hemorrhage before the Birth of the Child.

The position of the child in utero may be natural, and there may be no impediment to its expulsion, but

the life of the patient may be endangered by uterine hemorrhage. This seldom occurs during the second stage of labour; but in the first, when the os uteri is but little dilated, it is not uncommon. A disturbed state of the circulation, accompanied with a rapid pulse and heat of skin, as in abortion, may occasion uterine hemorrhage; and, without any other symptoms, the blood may gush copiously from the vagina. Mechanical injury, as a blow on the belly, or side, or a sudden concussion of the body, violent exertion, or great mental emotion; may occasion hemorrhage by detaching a portion of the placenta from the surface of the uterus. Sometimes the fœtus dies towards the latter period of gestation, and still remains in the uterus for several weeks, when the attachment of the placenta becomes loosened, and its separation is followed by hemorrhage. The expulsion of children that have been manifestly dead some time, is generally preceded by hemorrhage. But now and then cases of hemorrhage occur without any apparent cause; probably for the reason that the adhesion of the placenta to the uterus is preternaturally slight.

In general the placenta is attached to the fundus uteri, or very near it, but it is sometimes placed over the os uteri. During the first four months of utero-gestation the cervical portion of the uterus suffers no change, and it is impossible before the expiration of that time to know that a woman is pregnant. About the fifth month the neck of the uterus begins to dilate, and at the eighth, it is wholly obliterated; as this change of the cervical portion of the uterus is going on, some of the vessels of the placenta are separated from it, and hemorrhage is the consequence; this therefore may occur at any period after the dila-

tation of the cervical portion of the uterus has commenced. Sometimes hemorrhage does not occur until within a few days of labour; at others, not until within a few hours: but if the placenta is attached over the os uteri, when labour commences hemorrhage must ensue. It may also occur from the separation of the placenta, when placed naturally at the fundus uteri; it is then called accidental hemorrhage: but when the placenta is implanted over the os uteri, inevitable hemorrhage. The hemorrhage may come on, and cease for days, and then recur, and again cease; at length the patient's constitution suffers from loss of blood, she becomes pale, faint, and dies from exhaustion; the uterus not having power to expel the child, being as it were paralysed by the previous loss of blood. In some instances, uterine pains come on, the os tincæ becomes dilated, the membranes burst, the liquor amnii escapes, and the hemorrhage ceases, by the contraction of the uterus on the child which is expelled naturally. In other cases the hemorrhage has continued a long time, the patient's constitution has suffered in consequence, labour-pains come on, and the child is expelled, but only for the woman to die; for on the separation of the remainder of the placenta, the gush of blood which then takes place is often sufficient to kill her *; or, if she survives, it will

* In a few extreme cases of uterine hemorrhage, blood has been transfused from one subject to another with success, by Dr. Blundell. (See his experiments and cases in the Med. Chir. Transactions, vols. 9 & 10.; see also Lancet for January 3d, 1829.)

The first public experiment of the transfusion of blood was by Dr. Lower, at Oxford, in 1665; and it was subsequently performed in France, on the human subject, without any very en-

probably be but for a few months. Though patients do not always die if left to Nature, yet she is not in these cases a trust-worthy practitioner.

When hemorrhage from the uterus is moderate, it may sometimes be sufficient to lay the patient in the horizontal posture on a sofa, and keep the circulation tranquil by cold drinks, as tea, milk and water, gruel, &c., abstinence from animal food and fermented liquors, together with gentle aperients and bleeding, if indicated by the state of the pulse. Some recommend the mineral acids, with infusion of roses and sulphate of magnesia: this is a good mixture and may be given with advantage; but the best medicine in these cases that I know of is ten or fifteen grains of the nitrate of potass every four or five hours, plunged into cold water, and immediately swallowed, so that its solution may take place in the stomach; I have more faith in this than in any other remedy of the kind, but how it acts I know not. By this mode of treatment the hemorrhage may cease, the patient go her full time, and the labour may terminate favourably. But the hemorrhage sometimes recurs, of which there is always a probability as long as the uterus continues distended. Here experience shows that emptying the uterus of its contents is the most effectual styptic, and the only one to be relied on in extreme cases. How will you do it? There are two methods proposed; one is to turn the child, and finish the labour at once; the other, to rupture the membranes with your finger, or a catheter, and let off the liquor

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couraging results. Of five subjects on whom it was performed by M. Denis, three recovered, and two died; when the performance of it was prohibited under the penalty of imprisonment.

amnii, by which the distention is diminished; the uterus now contracts on the child, and the hemorrhage ceases; after some time, labour-pains come on, and the child is expelled. Suppose, says Rigby in his work, which is the best on this subject, you are called to a woman suffering from hemorrhage before labour commences; you make an examination by which you will ascertain the cause of the hemorrhage. If the placenta is attached over the os uteri, though the hemorrhage may have ceased, it will inevitably recur on the dilatation of the os uteri, and that recurrence may kill the patient; therefore, whenever I find the placenta implanted over the os uteri, I cannot trust to nature, and I introduce my hand as soon as I can do it without much difficulty, turn, and deliver. But if on examining I feel only the bald membranes, and no placenta over the orifice of the uterus, I then puncture them and let out the liquor amnii, and the hemorrhage ceases; I keep the patient cool, and in a recumbent position, and watch her; soon after, labour comes on in a regular manner. If the placenta be be implanted over the os uteri, either wholly, or in part, you recognise it by the feel; it is a spongy, lobulated cake. A person ought to have a finger and half to feel the os uteri, in these cases, by the common method of examination; for the uterus is so high up that one of ordinary length will not reach it: in common labour the uterus has descended low into the pelvis, and can be reached by the finger from the os externum; but in these cases you must introduce the whole hand into the vagina, and then pass one finger into the os uteri, and ascertain whether the presentation is that of the bald membranes, or of this

spongy lobulated cake. If the latter, we know that the hemorrhage will certainly be renewed; and therefore the sooner the delivery can be safely accomplished, by turning, the better. Delivery, in cases of uterine hemorrhage, may be attempted too soon, or delayed too long. It will be too soon if the hand is forced through the os uteri when it is but little dilated, which may occasion a fatal laceration; and it will be delayed too long, if so much blood be already lost that death may be the consequence, either immediately, or in a few hours after delivery.

I know three medical men who had each met with cases of hemorrhage preceding the birth of the child, and they lost their patients by neglecting to deliver sufficiently early. They therefore resolved that this should not again happen, and falling into the opposite extreme in the next cases they met with, they introduced their hands at once upon the first occurrence of hemorrhage, and killed their patients by the violence used in dilating the os uteri. What is the best rule of practice in those cases of uterine hemorrhage in which, with a common presentation, its recurrence may endanger the life of the patient? As soon as your hand will pass through the os uteri without difficulty, the sooner you deliver the better. In doing this proceed with caution; having introduced the hand into the vagina, pass one finger first through the os uteri, and then another, till the tips of all the fingers, forming a cone, are within the os uteri; next try gently to pass on the hand; if the os uteri gripes it like a cord, do not force your hand forward, but wait a little; a pain comes on, and out gushes a little blood; during this time the orifice is becoming more

dilated and relaxed; if it yields readily, finish the introduction of your hand, turn and deliver.

But suppose on examination the placenta is found attached over the os uteri? If the symptoms will allow your waiting an hour or two, the os uteri gradually dilating and relaxing, you will then generally be able to introduce your hand without difficulty. Which hand will you use? There are eighty chances to one in favour of the child's being naturally placed, with its back towards its mother's belly, and its belly towards its mother's back; if the belly is towards the posterior surface of the uterus, there also you will find its feet. Having placed the patient across the bed, with her breech close to its edge, pass up your left hand into the posterior part of the uterus, and the feet will fall within its grasp. Will you pass your hand through the placenta, or separate a portion of it from the uterus, to enable you to rupture the membranes? In general the placenta does not wholly cover the os uteri, and by passing your finger round it you will discover the bald membranes in some part of its circumference, through which, of course, you will introduce your hand. But if the placenta covers the os uteri entirely, the hand may be passed through it, which does not greatly increase the hemorrhage; this method, however, is not free from objections, for the passage of the head of the child through this opening will be attended with some difficulty. You also pass your hand through that which serves the purpose of lungs to the fœtus: for these reasons, we must rupture the membranes, if possible, by introducing our hand at the side of the placenta, and rend them "fore and aft," for this opening should be perfectly

free. The hand being fairly introduced into the uterus, lay hold of the feet, or of one foot, taking care not to mistake the hand for the foot. If I cannot readily find both feet, I bring down one, and make it half foot and half breech presentation, which is not particularly disadvantageous, for it causes the os uteri to be more freely dilated by the time the head has to pass through it. As soon as the feet are brought into the vagina, the liquor amnii escapes with a gush, and the flooding generally ceases. I now leave nature to expel as much as she can of the child in order to ensure the contraction of the uterus, which I endeavour to promote by friction on the abdomen. When the umbilicus is born the life of the child will be additionally endangered from pressure on the funis; I therefore proceed to extract without delay in the manner formerly described when speaking of breech and feet presentations. Young practitioners are often afraid to attack these cases with the promptitude their urgency demands, but allow a patient to go on flooding nearly to exhaustion, when, if she does not die during the delivery, or immediately after it, her ultimate recovery will be doubtful or almost impossible. The operation of turning before the liquor amnii has escaped is one of the most easy in the practice of midwifery; and in the cases of which we are now treating it must be done, otherwise the patient will die. I was consulted in a case of hemorrhage which had continued irregularly four or five days; I found the patient with a bleached face, and greatly reduced in constitution. On examination I perceived that the placenta was over the os uteri. It was the first case of the kind I ever met with; I was afraid of pushing my hand into the uterus, and only

ordered her some acidulated infusion of roses, perfect rest, and cold drinks: this was attended with no benefit; and thus it went on for four or five days, when I was again called to her, and again prescribed a similar medicine, differing only in colour. I directed them to send for me if she became worse, vowing if again summoned I would turn and deliver. I left her in the evening, and went home to bed early. About seven o'clock in the morning there was a violent ringing at the bell: my servant came up, saying, Mrs. Beale was dying. I ordered my horse, having five miles to ride; dressed as quickly as possible, and proceeded to the scene of action with all speed. When I came to the village, not far from the house of my patient I saw a posse of old women standing in the road, and guessed at the subject of conversation. On coming up to them, I said, "Good morning; what o'clock is it?" The answer I received from one of them was, "Never mind what o'clock 'tis; dame Beale is dead by this time." When I came to the door I was saluted by the blubbering of the woman's husband and brother; I rushed up stairs, and directly passed my hand up the vagina; I thought it was in the uterus; but it was only in the portico, the entrance into the sanctuary; I then passed my hand on through the os tincæ into the uterus. I used my left hand and came directly on the feet, which were in the posterior part of the uterus; I grasped them, drew them down, and delivered with the greatest facility. This being done, I found it was a twin case. I immediately introduced my hand again, ruptured the membranes of the second ovum, and delivered: this was performed with equal ease, the uterus contracted, the placenta came away in half an hour, and

she recovered. Six weeks afterwards, as I passed by, I saw her at the garden gate feeding her ducks. In a case of placenta presentation the woman should not be left, for before you have been absent a quarter of an hour, the hemorrhage may be renewed profusely. You must wait the proper time for the delivery, and amuse yourself with books, &c. in an adjoining room, in order that you may be ready when wanted. In these cases it is sometimes difficult to detect the presentation. I was called to the wife of an opulent person in the city, who was flooding: on examination a large clot of blood, which was in the way, prevented my ascertaining whether the placenta or the membranes were over the os uteri. I requested a consultation, and sent for Dr. Haighton, who felt the same doubt as to the nature of the presentation; but it was agreed to pass the hand on, remove the coagulum, and, if possible, to rupture the membranes, as her constitution was already affected by the loss of blood. I discovered the membranes, and with my nail previously notched, sawed them right and left; out gushed the liquor amnii; the hemorrhage immediately ceased, and did not return. In a few hours uterine pains came on, and the child was expelled naturally.

Sometimes after delivery so much blood has been lost, that though the hemorrhage may have ceased, the patient's life is in extreme danger, and can be preserved only by the most persevering and judicious employment of stimuli. No man does his duty unless he watches his patient, and delivers her before she has lost so much blood as seriously to affect her constitution. These cases are very deceptive; the hemorrhage may cease and return, and may go on ceasing and returning alternately, till the constitution

suffers a fatal exhaustion. But before proceeding to deliver, it is necessary to wait till the constitution is slightly affected by the loss of blood, when the introduction of the hand will be rendered comparatively easy: if the os uteri is still undilated, and not relaxed, the introduction of the hand will be attended with so much violence, that a fatal laceration may be the consequence. But hemorrhage tends to relax the fibres of the uterus; try, therefore, carefully to introduce your hand; if this is much resisted, it will be proper to wait a little; if the parts yield readily, this is the time to turn and deliver if it should be found requisite. If the placenta is not attached to the os uteri; if you feel the membranes and the hard head behind them, rupture them, and allow the water to flow; the uterus immediately contracts, the hemorrhage ceases, and in a few hours labour generally commences. It is possible the hemorrhage may continue after the membranes are ruptured: this, however, never occurred in my practice, or in that of Mr. Rigby; but if the hemorrhage does continue, and the life of the patient is endangered by it, you must then turn and deliver under the disadvantage of a contracted uterus.

In conclusion, I must impress upon you the rule, that when the placenta is attached over the os uteri, you must turn and deliver; and you must do this before the constitution of your patient suffers from too long a continuance of hemorrhage. If in a case of flooding before delivery, the presentation is that of the membranes, and not that of the placenta, rupture the membranes and allow the liquor amnii to escape; the uterus will contract upon the child, and the hemorrhage will cease; but if the placenta presents, you have then no choice; you must turn and deliver

as soon as the parts are sufficiently relaxed to permit this to be done without violence.

(c.) Plurality of Children.

Twin cases are calculated to occur once in about seventy labours. The uterus very seldom contains more than two children, though in very rare instances it may contain three, four, or even five.* Mr. Rigby, at the age of eighty, was the father of four children at one birth.

In the first place, how is a twin case to be ascertained? In the second, when ascertained, what kind of management does it require? It is impossible to ascertain the existence of twins before the birth of the first child. After the birth of the child, in every case to which you are called, you should place your hand on the abdomen of the mother; if there is not another child you will feel, just above the pubes, a hard round ball, filling the hypogastric region, this is the contracted uterus, and above this the abdomen is flaccid, which is an infallible proof that there is not another child. But when another child is still in the uterus, the abdomen will be felt to be as hard, and nearly as large as before the delivery of the first. But it sometimes happens that women are pregnant while suffering from ovarian dropsy, the ovary and the uterus, side by side, go on enlarging together. In this case, the belly of the patient, after the delivery of the child, is still large and hard; the external examination therefore in this state of the abdomen, is not sufficient, the hand must be intro-

* In Phil. Trans. (vol. lxxvii. p. 344.) there are some remarkable cases of plurality of children communicated by Dr. Garthshore.

duced into the vagina, and the fingers partially into the uterus; if there is another child you will feel the membranes, and the presenting part of the child behind them. The patient may be surprised at the introduction of your hand, but any nervous reluctance to this on your own part must be overcome, for sometimes twenty-four hours, nay, three days, may elapse before the action of the uterus will be resumed; and if it should prove that you have left your patient while a child remained undelivered, you will be laughed at as an ignorant practitioner. In the first twin case I ever met with, I failed to discover the existence of a second child: the placenta not coming away, I called in a friend, who soon discovered the mistake; although I did not leave my patient, I did not escape ridicule.

Supposing the existence of twins to be ascertained, what is to be done? You must not leave your patient until she is delivered. You must never attempt to remove the placenta until the second child is born; this indeed cannot be done without difficulty; but if it is done you will manufacture a most serious hemorrhage. The uterus is often tardy in resuming its efforts for the delivery of the second child. The first object is to excite the uterus to the expulsion of the child by its own powers. If this cannot be done, it will be necessary to turn and deliver. How do you excite the action of the uterus? The membranes are to be ruptured immediately on the delivery of the first child; the liquor amnii escaping the uterus will be diminished in size; and, after an interval varying from half an hour to two hours, pains will again come on: during this time we must endeavour to excite the action of the uterus by occasional pressure and friction on the abdomen. Be prepared for the occur-

rence of hemorrhage in these cases, and manage the labour so that this danger may be guarded against by all the natural powers. Make the uterus, if possible, expel the head, shoulders, body, and limbs of the child. Thus you will have the fundus uteri close on the heels of the child: irregular contraction of the uterus, therefore (which is most frequently owing to bad practice), cannot take place. I have compared notes with those who make it a rule to extract the second child immediately after the birth of the first, and I find that they are often embarrassed by irregular contraction of the uterus and hemorrhage; neither of which will happen if the uterus is left to expel every part of the child. With respect to the position of the second child, if the presentation is not natural, the same mode of treatment will be required as if there were only one.

If in two hours after rupturing the membranes the child does not advance, or the pains return, you may then turn and deliver, which will be done with ease, for as the os uteri is inactive, no resistance will be offered by its contractions. Having turned the child, its extraction must be as deliberate as possible till the umbilical cord becomes liable to pressure; the child is then in danger of asphyxia, and you must proceed as formerly recommended in feet and breech presentations. When the second child is born, feel for a third, and so on until you are quite satisfied that no other remains.

With respect to the management of the placenta in these cases, their removal is not to be attempted until it is ascertained that no child is left in the uterus. This point being settled, wait a little and use friction

on the abdomen. When on examination per vaginam you can feel the placenta resting on the os uteri, and the uterus, by pressure externally, contracted into a ball at the bottom of the belly, you may then take hold of all the cords, and gradually extract, as in a common labour. As each child is born, two ligatures must be applied to the umbilical cord, which is to be divided between them.

(d.) Rupture of the Uterus.

The uterus is sometimes ruptured by extraneous violence, and sometimes spontaneously by its own action; however it may occur, it is an injury of the most dangerous character. The cervix uteri is so much more disposed to laceration than any other part, that four times out of five, when spontaneously produced, it occurs in this place, just at the connection of the uterus with the vagina. The vagina may also participate in the laceration.

When laceration has taken place to a certain extent, the symptoms are the receding of the presenting part, external discharge of coagulated blood, sudden or gradual cessation of the pains, fainting, trembling, with a sense of sinking; the pulse is small and rapid, the countenance altered and pallid; there is sickness, and the fluids vomited are sometimes of a dark colour. When these symptoms appear, there is little doubt but laceration of the uterus has taken place, and previously to their occurrence, in addition to violent uterine action which makes but little impression on the child, the abdomen feels hard like a cramped limb, and the patient complains of fixed pain generally above the pubes with a sense of rending. When the

head is low down in the pelvis, laceration may occur without a receding of the presenting part; it is then more difficult to detect. But whether you know it or not, the symptoms just mentioned are sufficient to warrant the application of the forceps when practicable. Laceration of the uterus may be occasioned by the forcible introduction of the hand in the undilated state of the os tincæ, or by improper violence used in turning the child when the uterus is contracted, or by the unskilful management of instruments; on all these points I have already cautioned you. It is a prevalent notion, that a healthy uterus may be lacerated by a forcible, or irregular contraction against any hard unyielding substance, such as a joint or bone of the child, or the linea ilio-pectinea in the pelvis of the mother when this forms an unusual projection. The uterus may certainly be lacerated by its own action; but I doubt whether this would occur unless the parietes of the uterus were unusually thin, or unless there was, at some part, an alteration of its texture. The supposition of some change of this kind has been confirmed by examinations after death; in some instances the change of texture predisposing to laceration has been such that this has occurred where the pains have been of the weakest kind. Dr. Denman relates a case of this kind, when after the most trifling pains on passing up his hand it came in contact with the bowels. Rupture of the uterus has been found after death to have been occasioned by sloughing. A midwife was called to a woman in labour, but finding the pains very feeble, and at long intervals, left her after remaining with her a few hours. Slight pains continued to recur; and about one o'clock in the morning blood was discharged

from the vagina, and the symptoms in other respects became alarming. A medical man was sent for, who said they were mistaken in supposing the labour was making any progress; the pains had entirely ceased, and he believed from the convulsed and laborious breathing of the woman, that she was dying of phthisis pulmonalis. After this medical gentleman had left her I was sent for, but she died an hour before I arrived. The belly of the patient was still warm, and I could distinctly perceive by the touch, the head and limbs of the child with the intervention only of the parietes of the abdomen. Coupling this with the account of the midwife of the symptoms preceding her death, I wrote to the medical man who had seen her, expressing my conviction that it was a case of rupture of the uterus, and apprising him of my intention to examine the body at a specified time. Mr. Hodgson and this medical man were present, and on cutting through the abdominal parietes, the child was found in the cavity of the peritoneum among the intestines. The laceration was in the posterior part of the uterus which was in a sloughy state, and thin and livid in the vicinity of the laceration. These are deplorable cases, but while there is life there is hope: some cases of rupture of the uterus have done well.* The bowels and peritoneum inflame, and there is some hemorrhage from the lacerated part of the uterus: the danger is enhanced by these symptoms; but, in-

* See Lond. Med. and Physical Journal, vol. xix. p. 209.; also a case of separation of a portion of the uterus during severe labour, communicated by Dr. Merriman, Med. Chirurgical Transactions, vol. xi. p. 392.; and, in vol. xiii., cases of rupture of the uterus successfully treated by Mr. Birch and Dr. Smith.

dependently of them, the mere laceration of the uterus is sufficient to produce a feeble, rapid, and tremulous pulse, great disorder of the constitution, quick and anxious respiration, delirium, and death. Can you anticipate the occurrence of a laceration? If so, can you prevent it? and in what manner? Dr. Hamilton says it is preceded by a hard and cramped state of the belly, by incessant and agonising pain, or if there is any interval it is extremely short, and during it a sense of tightness, straining, and rending is felt internally in some part of the abdomen; that from these symptoms you may anticipate laceration, which is to be prevented by paralysing the uterus, and thus subduing its inordinate action. Bleeding must therefore be resorted to, till fainting is produced, when the action of the uterus will be greatly diminished, if it isnot altogether suspended; you must then extract the child, but this will depend on the stage of the labour. If the os uteri is not fully dilated you must bleed, and wait a little, and then apply the forceps if the head is within their reach. If the head is too high up for the forceps, we should hesitate before resorting to the perforator, for the symptoms may be too equivocal to justify the destruction of the child; if, however, the necessity of a speedy delivery is decided on, we have under these circumstances no other resource. Laceration most commonly occurs when the pains are slight, and the action of the uterus weak. If laceration has taken place, and the head or presenting part is receding, you must deliver as soon as possible by searching for and bringing down the feet; or apply the forceps if the head be within their reach. Dr. Douglas met with a case of laceration of the uterus: on introducing his hand he found that it

passed into the bag of the peritoneum; at first he knew not where it went, he searched for the feet, and having found them he extracted the child carefully, and afterwards the placenta: this woman recovered with very little more suffering than that of some pains in the belly. Dr. Osborne saw this patient with Dr. Douglas on the third day after her delivery, when her pulse was a hundred, and in six weeks she was perfectly well. This woman again became pregnant and was attended in her labour both by Dr. Douglas and Dr. Denman; fearing another laceration of the uterus, Dr. Douglas turned and delivered, and while turning he felt for the cicatrix of the former laceration, but could not discover it. She afterwards became pregnant again, and the labour was accomplished naturally. A termination so favourable as was exemplified in this case must, however, be considered as a rare exception.

The process of labour has been considered in all its varieties. We are now to speak of the treatment of women after delivery.

LECTURE THE FIFTH.

ON THE GENERAL MANAGEMENT OF WOMEN AFTER DELIVERY, AND ON THE TREATMENT OF THE COMMON AFFECTIONS INCIDENT TO THE PUERPERAL STATE.

SECTION I. *General Management, &c.*

AFTER the birth of the child, and the removal of the placenta, place your hand on the abdomen, above the

pubes, to ascertain whether the uterus is contracted; clear away the coagula, and apply a warm dry napkin closely to the pudenda; a bandage of considerable width should also be applied round the abdomen, not so tight as to produce any uneasiness, but sufficiently so to give a comfortable degree of support; which will favour the contraction of the uterus, and, consequently, tend to prevent hemorrhage. The curtains of the bed should be closed, and, as a premature disturbance may produce syncope or hemorrhage, the patient should remain at rest, without any change of position, for two hours. Some person should, however, remain in the room with her, and it should be ascertained, by an occasional enquiry or examination, that there is no flooding. No practitioner should take leave of his patient in less than an hour after the delivery of the placenta: this may be occasionally felt as a great sacrifice of time; but if this rule is not observed, a practitioner may sometimes lose a patient by flooding, whose life he might have preserved, if he had quitted her less hastily. After her delivery, the patient may be allowed a little tepid gruel; and when two hours have elapsed, the nurse should be directed to make such alterations in her dress as may be necessary to her comfort: during labour, the round flannel petticoat is inconvenient; it is in the way; and prevents, in some measure, your giving proper support to the perinæum: a shift of considerably less than the usual length is much better. Whatever change is made in the dress, &c. of the patient, *the recumbent position must be strictly preserved: she must not, on any pretext, be got upright for one moment.* You make your first visit after delivery, according to

circumstances, either in twelve or twenty-four hours, when you may expect your patient's pulse to be soft and tranquil. Ascertain from the nurse whether the accustomed discharge goes on favourably, and also whether the urine has been freely passed; a retention of the latter is sometimes the effect of pressure against the urethra during the passage of the head of the child. This trifling impediment is frequently overcome during the action of a dose of castor oil, or other aperient; but should the patient be suffering the pain and irritation of a distended bladder, the introduction of the catheter must not be delayed: a brisk aperient should be given, and warm fomentations employed above the pubes. If the retention of urine should continue, the bladder must be emptied by the catheter as often as circumstances require.

(b.) After-pains.

The complete contraction of the uterus does not, after delivery, take place at once, but by several efforts occurring at irregular intervals, and attended with pains of a lesser degree, but similar to those of labour: these pains affect the back, belly, and thighs; but they are not accompanied with heat of skin or disturbance of the circulation. After a first labour, the patient does not, in general, suffer so much from these pains as in subsequent labours. These pains are connected with a process of nature which should not be materially checked; it is as well, however, to direct some anodyne draughts, consisting of two drachms of syrup of poppies in an ounce and a half of almond emulsion; one of which might be taken if these pains

are severe, and repeated, if they are not mitigated, every three or four hours. If the pains are trifling it is better to dispense with the anodyne; if they are troublesome, give no more of it than is necessary. If there is great irritability of the constitution, and the patient's suffering from after-pains is unusually severe, it may be necessary to add to the above draught twenty drops of the tincture of opium.

Section III. *Diet.*

During the first three days after delivery, the breakfast, dinner, and supper of the patient must consist of gruel and barley-water; no solid meat, no broth, no fermented liquor. The patient must be kept quiet and cool; no gossips are to be admitted; the husband must stand as sentinel to exclude all intruders; no stimulating food must be given, for the constitution is now very easily excited: this irritability usually subsides in about three days.

When is the child to be applied to the breast? For the first twelve hours there is no secretion of milk; at about the end of this time a pricking sensation is felt in the breasts, which become rather full, and in about twenty-four hours the tide comes in. The system is considerably disturbed for some little time after a severe and protracted labour, and the milk secreted during this disturbance will probably disorder the child; therefore, right or wrong, under such circumstances, I never allow the child to be put to the breast till the mother has had some tranquil sleep. If the patient is delivered in the evening, and has slept during the night, the child may be put to the breast in the morning, that is, about twelve hours after delivery; and this should be done whether there is milk

or not, for the sucking of the child excites the breast to secretion: after waiting twelve hours, if the mother has not slept, the child may be put to the breast in order to excite secretion, but it is better still to wait until the mother has slept before the child is allowed to suck in an effectual manner. The third, fourth, or fifth day may pass, and the bowels of the patient may not be relieved by any evacuation: there is, during pregnancy, a great disposition to costiveness, and women who, in this state, neglect to take aperients, fall into labour with loaded bowels. This, indeed, is so commonly the case, that Dr. Denman thought this state, from its regularity, a natural one, and on this ground abstained from any interference. On the third day I prescribe an active purge, whether the patient has had an evacuation or not; for by a spontaneous evacuation the bowels are still but partially relieved: castor oil should be a standing dish in the lying-in room, of which a large table-spoonful must be given on the third day after delivery, not in brandy, but in milk, or coffee. Fill two thirds of a wine glass with milk or coffee, and upon this pour a table-spoonful of castor oil, which forming a globe in the centre of the other fluid may be swallowed without being tasted: this dose is generally sufficient; but if in six or eight hours it does not operate, give a dessert-spoonful more; if the second dose does not succeed, a glyster should be administered. Some patients very much dislike castor oil; I then indulge them with the following black dose: ℞. infus. sennæ ℥ii. magnes. sulph. ℥iii. manna ℥ii. tr. jalapæ ℥i. f. haustus: if this draught does not operate in a few hours, rather a weaker dose of the same kind should be repeated. The aperient

should be such as to ensure four or five motions on the third day after delivery. On the fourth day, provided all be well, the patient may take a little boiled chicken, or mutton, or broth; after the fifth day has passed, the patient should be quite well, and your subsequent visits are merely for the purpose of watching her. Women now generally wish for wine or porter; I usually mix good barley-water with milk (equal parts) making barley-gruel, and presenting this beverage, I tell them, "This is your wine, and your porter too; it will relieve your thirst and sinking at the stomach, and will manufacture milk better than any thing else." The longer you keep the patient in the recumbent posture the better, as procidentia uteri will be less likely to occur; but about the fifth or sixth day, she had better be removed from between the warm blankets, the heat of which is relaxing; she must not, however, be allowed to sit upright, but must lie on a couch, or sofa, or on the outside of the bed: the trunk must be kept in the horizontal position; but it is difficult to make patients preserve this posture; they think, as long as their legs are kept up, it is no matter where the trunk is. I care not a straw where their legs are, provided the trunk is horizontal: for three weeks after delivery, the patient should be kept chiefly in the recumbent posture. The uterus was very recently of large size; an immense sac: the consequence of sitting up soon after delivery, with a heavy uterus suspended in a flaccid abdomen, will be a prolapsus of this organ. Patients in the higher classes, who can preserve the recumbent position for any length of time, seldom suffer procidentia uteri, but it is extremely common among the poorer classes,

who get up very soon after delivery, and fatigue themselves with their domestic concerns. The seventh, eighth, and ninth days pass, and your patient continues quite well; during the first four days you see her every day; for five days after, every second day; the ninth day is esteemed a very critical one, not that it is more so than any other; but if patients, from supposing it to be so, take more care of themselves than they otherwise would, there is no harm in indulging their prejudice: on the tenth day, but not until then, you may allow your patient a little malt liquor. Porter, or fresh mild ale, relieves that sinking sensation at the stomach and irritability of the nervous system, which are often so troublesome at this period; you may, therefore, allow your patient to begin with half a pint a day of either, and, in a little time, it should be increased to half a pint three times a day, namely, at luncheon, dinner, and supper. Some women think it right to drink half a gallon of ale or porter a day, and will call you a stingy doctor if you restrict them to the above-mentioned quantity.

Women generally have an abundance of milk: fluid nourishment seems more favourable to its secretion than that of a solid kind: if a patient goes to bed taking a solid supper only, little or no milk will be secreted; but if she has taken a supper of two thirds milk and one third barley-water, constituting what I call barley gruel, the milk will spout from the breasts during the night. If, therefore, the secretion of milk is slow and scanty, give them sufficient fluid nourishment. When is the patient to go out? At the end of three weeks in the summer, and four in the winter, if all is going on well: you had better not allow it before,

and not even then if the weather is colder than usual; for if she suffers from it you will be blamed. You must bear in mind that whatever mischief happens after delivery, even if the woman should break her leg, it will be imputed to something that happened at her lying-in, and the doctor must bear the blame.

It is sometimes an object in practice to diminish the quantity of milk, or rather to adopt a treatment by which it will be no longer secreted; this is occasionally required of us on account of the ill health of the mother, sometimes from the death of the child, or for less substantial reasons, such as the habits of fashionable life, which will not permit a mother to be nursing her child, as she should, every three hours. If the breasts are moderately hard only, easy, and but little distended with milk, do not empty them, for secretion will be thereby encouraged, and they will soon fill again; but if the breasts are very hard, painful, and much distended with milk, empty them partially, so as to relieve the distention, as often as this may be necessary. This may be done by another child, or by a woman. There are women in London who exercise no other profession — they ride about in hackney coaches, look very fat, and seem to thrive on sucking their fellow-creatures: prescribe solid instead of fluid nourishment, and a black draught every second morning, until the secretion of milk has nearly or altogether ceased. During the first fortnight after delivery, the patient should be kept quiet, and as few visiters admitted as possible, as there is during this time a preternatural susceptibility of the nervous system. Thus much for the treatment of women after delivery under ordinary circumstances.

Section IV. *Unfavourable Nipples.*

The nipples in some women are preternaturally small and flat; this state of them is productive of much inconvenience, and does not always admit a remedy. Milk is secreted, the breasts become distended and hard, and there is no nipple for the child to take hold of. You may sometimes succeed in elongating the nipple by the following method: — Take a pint decanter, or a wine bottle with a smooth mouth, fill it to the neck with boiling water, pour out this water almost immediately, and, provided it is not too hot, apply the mouth of the decanter to the flattened nipple. As the decanter cools a vacuum will be created, and the nipple will be elongated into its neck; retain it thus a few minutes, when the bottle is to be gently removed by depressing it, and immediately apply the child. A vigorous child, of three or four weeks old, will sometimes draw out the nipple. Machines have been invented for the purpose, but they are less to be depended on than the mouth of another child, of a woman, or the warm bottle. Foreigners very commonly employ for this purpose a puppy of about three or four days old: this is a very good method, but is not to the taste of English females. When the nipples are flat, attempts should be made, a few weeks before the expected accouchement, to draw them out.

Section V. *Excoriation of the Nipples.*

It often happens that the nipples, from the friction of the child's tongue and gums, become excoriated;

they sometimes ulcerate, and deep chaps are formed nearly through them: every time the child sucks they bleed; the mother suffers exquisite pain, and her perseverance in nursing is a constant struggle between bodily pain and parental affection. The nurses and doctors have a long list of remedies for this complaint; but it is in general obstinate, and the remedies are ineffectual; in attempting to cure it you are rowing against the stream: as long as the cause, viz. the action of the child's mouth in sucking, is renewed at short intervals, local applications are of little use. An apthous state of the child's mouth sometimes induces and keeps up a considerable irritation of the nipples. The following are the best known remedies for this affection: —Unguent. hydrarg. nit. dilut.; solutions of the metallic salts, as two grains of the sulphate of zinc in an ounce of rose water; a solution of the nitrate of silver, sufficiently strong to cause only a slight smarting, as a grain in an ounce of distilled water; or half an ounce of brandy in half a pint of rose water. The nipples are to be washed with a little milk and water both before and after sucking; and during the intervals these solutions are, by means of linen dipped into them, to be applied constantly. There is a quack remedy in great repute among many females, it is called the nipple liniment; it is oily, and of a reddish colour. A liniment, composed of three parts of basilicon and one of the compound tincture of benzoin, is recommended by some; others keep the nipples constantly wet by linen dipped in cold water. Finely powdered gum-arabic sprinkled over the nipples both before and after nursing is sometimes beneficial. But as long as mechanical irritation is kept up by the

action of sucking, remedies are but of little service. To prevent this irritation shields are invented, made of wood, ivory, silver, glass, &c.: those of glass are the best, as you can see whether the child draws milk or not: the shield is to be nearly covered with the common integument of the teat of a cow, which is stretched over it; it is to be applied over the nipple, which is thus protected, during the action of sucking. If properly used, this contrivance is in many cases successful; but there is a right and a wrong method of employing it, and the nurse will most probably choose the latter. When the teat is sewn on the shield, its extremity should not extend far beyond the apex of the shield; it may be left half or three quarters of an inch beyond it; but if it projects more, the child will get the teat between its gums and prevent the passage of the milk through it. The teat should also closely cover all the orifices to which it is stitched; for if air-holes are left, no vacuum will be formed, and the child will draw nothing but air. If the excoriation and chaps are not remedied by any of these means, and the mother's health suffers from continued pains and irritation, you must recommend either a wet nurse or the weaning of the child.

To prevent this tenderness of the nipples you put them under a system of training, for six weeks, or more, before delivery. The skin covering the nipples is thin and irritable, and therefore disposed to excoriation: this irritability is to be diminished, and the skin rendered thicker, by exposing the nipples to the air, and rubbing them for ten minutes three or four times a day, by washing them with an infusion of oak or pomegranate bark, or some vegetable astrin-

gent. By a regular employment of these means, the skin covering the nipples will become thicker and harder; and its irritability will be diminished.

Section VI. *Mammary or Milk Abscess.*

The child should be applied to the breasts before they become hard and distended with milk; the child otherwise sucks with difficulty, the breasts are but partially relieved, they become painful, inflame and suppurate, causing distress to the patient, and annoyance to the practitioner. The inflammation which ends in mammary abscess, is of the phlegmonous kind; and it may be produced by cold, as well as by distention of the lactiferous tubes: passions of the mind are also enumerated among its causes. Whether from negligence, from the claims of fashionable life, or more useful avocations, the nursing of the child is sometimes so long deferred, that the tubes become distended; this state of distention is perhaps permitted to occur frequently; at length, after the child has sucked, and the breasts are otherwise flaccid, there is felt in one part a small hard circumscribed tumour, which is painful on pressure; in this tumour phlegmonous inflammation commences: there is chilliness succeeded by heat of skin, the tongue becomes white, the pulse quick, and the breast painful. The cure of this incipient disease by resolution must be immediately attempted; for if allowed to go on three days, it will terminate in suppuration. The treatment, to some extent, resembles that of phlegmonous inflammation in any other part; it consists in the application of leeches, in purging, and a low,

cooling diet; in addition to which, it is of the highest importance to keep the lactiferous tubes empty. These minute vessels are, I think, spasmodically affected: be this as it may, the breasts are most effectually disposed to permit the escape of the milk by hot fomentations, which are to be applied, for half an hour at a time, by means of flannels wrung out of hot water, and renewed every five minutes, while the escape of the steam is prevented by placing over them a wooden bowl of sufficient size, or some such contrivance. After the fomentation, immediately apply the child to the breast, or get it drawn by a woman, when it will be emptied readily, and the patient will be considerably relieved. The fomentations and drawing of the breasts should afterwards be so frequently repeated, as to prevent an unpleasant degree of distention; in the intervals, cover the breasts with a warm poultice, which I am informed diminishes the secretion of milk. Under a steady perseverance in this plan, the excitement of the constitution is quieted, the hard tumour gradually diminishes and disappears. Some practitioners recommend cold applications, but they are extremely prejudicial, if only by rendering the abstraction of milk more difficult, to say nothing of the well known fact that the disease is frequently produced by cold. Sometimes, in spite of the most judicious treatment, suppuration will take place: if the inflammation and other symptoms obstinately continue for some days, if there are shiverings together with shooting pains in a particular part of the breast, which is elevated, and has a shining appearance, suppuration has certainly commenced. You will then relinquish the use of purgatives, and endeavour to hasten the suppura-

tive process by hot fomentations every four hours, and by the application of thick, warm poultices; in a few days more, the matter approaches the surface. Will you open the abscess? If you do, you will relieve your patient from suffering, and by the evacuation of the matter the constitutional disturbance ceases; but the wound will not heal so soon, and the maturation of the abscess will not be so complete as if the whole process were left to nature. If there is great irritability of the nervous system, and agonising pain attending the suppurative process, opium must be given in such doses as may be necessary. It sometimes happens that the wound does not heal favourably, the part continues hard, and sinuses are formed from whence pus is made to ooze by pressure; the hardness is owing to the deposition of coagulable lymph: you must heal the sinuses, and the lymph will be gradually absorbed. Poultices must now be discontinued, and a weak solution of a metallic salt, as one or two grains of the sulphate of zinc in an ounce of rose water, is to be injected into the sinuses three or four times a day; soft linen rags, saturated in a solution of double this strength, and covered with a fold of dry linen to prevent evaporation, are also to be applied externally. Some practitioners give internally the oxymuriate of mercury, in doses of a twelfth, an eighth, or a sixth of a grain, in decoction of sarsaparilla twice a day; this is a good medicine. They also apply a plaster over the part, composed of one third of the extract of hemlock, and two thirds of the emplastr. plumbi.

Thus much for the general management of women after delivery, and for the treatment of those slighter

affections, connected with the puerperal state, which do not endanger life, and which are of common occurrence. I have now to speak of those diseases connected with parturition, which, though less frequent, are more severe or dangerous.

LECTURE THE SIXTH.

ON THE DISEASES OF WOMEN AFTER DELIVERY.

Section I. *On Puerperal or Child-bed Fever.*

In general, patients do very well after delivery; but now and then a frightful mortality occurs among lying-in women, the cause of which is the puerperal or child-bed fever. In the Hôtel Dieu at Paris, not long since, three fourths of the women attacked with this formidable malady died. At Edinburgh, also, the mortality from this disease was very great. Some years ago, at the Westminster Lying-in Hospital, its ravages were such that they buried two in a coffin, in order to conceal from the public, as far as possible, the extent of the mortality. The prevalence of this fever at Sunderland gave rise to Dr. Armstrong's valuable treatise on this subject. It prevailed at Leeds; and Mr. Hey, junior, who also wrote on the subject, lost at that time about twelve patients. Even now, I and my colleague have to contend with puerperal fever at the Westminster Lying-in Hospital about every two years. The disease has been in many villages no less fatal than in towns; and one singu-

larity of this disease is, that it often prevails in the practice of one medical man, while other practitioners of the same district do not, perhaps, meet with a single case of it. The ravages of this fatal disease have also been confined to particular wards of a hospital, while the patients in other wards have entirely escaped it.

There are two essential circumstances attendant on this disease, — fever, and abdominal inflammation; and it has long been a matter of dispute whether the fever produces the inflammation, or the inflammation the fever: of this I shall speak presently. The disease sometimes commences and proceeds very insidiously; some of the most conspicuous symptoms, as vomiting, heat of skin, &c., being absent. In general it begins about the second, third, or fourth day after delivery. The common symptoms are, rigors, succeeded by heat of skin; a full, hard, rapid pulse; occasional vomitings; distress of countenance; great debility, and a suppression of the secretion of milk: there is permanent pain and tenderness in some part of the abdomen, most frequently about the umbilicus, which is so much increased by pressure, that even the approach of your hand makes the woman shrink. Some patients tell you, when questioned (as in pleurisy and common peritonitis), that the rigors and constitutional disturbance preceded the pain; and others will say, that the pain preceded the constitutional affection. The disease consists of peritoneal inflammation, with continued fever. The acute stage continues from one to two or three days; during this time the rigors are severe; the skin very hot, though at some periods clammy; the pulse quick and full;

the belly tumid, and susceptible of great pain from the slightest pressure; the tongue is white; the respiration short and quick, and the countenance anxious: these are the signs of abdominal inflammation, and this stage of the disease is often a fatal one. After these symptoms have continued about forty-eight hours, or at most three days, the pain is somewhat diminished; but the belly is more tumid, the pulse becomes smaller and more rapid, beating from 130 or 140 to 150 in a minute; the lips are pallid, the countenance sunk, the breathing is still quick, and the woman lies constantly on her back. In about five or six days from the commencement of the disease the third stage begins: the countenance is then still more sunk and pallid, the breathing more hurried, the pulse quicker and more feeble; the pain in the abdomen is less, but its parietes are distended like a drum; the woman moves restlessly about the bed; her mind becomes affected; there is delirium, which, however, is not constant, and presently she dies. The progress of this disease is sometimes so rapid as to be fatal in less than forty-eight hours. On examination after death, the vessels of the omentum and peritoneum are found to be turgid with blood; there are extensive adhesions in many parts of the abdomen, which is partly distended by air, and partly by effused serum, with flakes of lymph floating in it; sometimes there is on the intestines a concretion of a fatty appearance; the uterus, in particular, which is sometimes covered by a coat of coagulable lymph, and the viscera generally, are found to have suffered violent inflammation. The essential and obvious fact is, that there has been acute peritoneal inflammation;

that all the viscera have suffered inflammation, and none in a greater degree than the uterus.

The pain in the abdomen, in puerperal fever, though it may vary in its degree, is constant; it is increased by pressure, and accompanied by fever: these circumstances will distinguish it from after-pains, between which there is an interval, and during which there is neither fever nor tenderness of the abdomen on slight pressure.

The cause of puerperal fever is unknown; it is, however, generally believed to arise from some specific contagion: for my own part, I believe it sometimes occurs without an origin of this kind, as by common peritoneal inflammation, of which fever is the consequence; but there certainly is a disease of this kind which is infectious, and then it plays the very Devil: here the fever precedes the inflammation. Thus it is sometimes a sporadic disease, not being infectious, and at other times the result of contagion: but in my own practice I have never seen the latter exemplified. Before I was as cautious as I am now I did not change my clothes before visiting my other midwifery patients, after seeing one who was suffering under puerperal fever, yet I never in one instance carried the infection from one patient to another. Nevertheless, the disease is affirmed to be infectious, and well authenticated circumstances seem to favour this opinion. I have heard it said by medical men, that they have carried the infection from one patient to another, and this after a journey of six miles, which has been performed against a rough wind. One practitioner informed me he was at the opening of the body of a female who died of this

malady: he carried the infection to an institution, and almost all the patients died who were attacked by it. Sometimes it occurs only in one hospital of a city, at other times it prevails only in private practice. Although my own practice has never furnished me with proofs of the infectious character of the disease, I think it right to act with caution; and now make it a rule never to visit my other patients after seeing one suffering from puerperal fever, without first changing my clothes: this rule obliges me to keep a suit of clothes expressly for the purpose of visiting my contaminated patients. Fools never learn but in the dear school of experience; I do not feel disposed, in the present instance, to take a lesson in this school.

The miasma of puerperal fever rarely infects women who are not yet delivered; but it sometimes does, and it then occasions abortion, to which, death succeeds in two or three days. The late Sir R. Croft lent me some papers on this subject, in which there were related twelve cases of this kind: among these cases, it was stated that a pregnant woman was attending on a friend in puerperal fever, who died: she was herself attacked with the common symptoms of this disease; it produced abortion, and she died; and the usual appearances were found on examination after death. The washerwoman who washed her linen was pregnant: she also had symptoms resembling those of puerperal fever; but being freely bled, purged, &c. she recovered. The disease has been carried by a nurse to a pregnant woman. Corrupt air, whether that of small close apartments badly ventilated, or of marshy situations, stinking ditches, &c. seems to favour the production of this disease.

The London Lying-in Hospital has very few cases of this description: in the Westminster Hospital they are very numerous.

There exists at present a great difference of opinion with respect to the treatment of this disease: nearly all who have written or lectured on the subject up to the present time have considered it a typhoid disease, characterised by great debility and inflammation of a low character; they were consequently deterred from measures of active depletion. Dr. Clarke gave bark, with compound spirit of ammonia. Dr. William Hunter said it was the only disease connected with the puerperal state in which he could do no good; "for," says he, "I have tried both the stimulating and the depleting plan without success." Dr. A. Gordon of Aberdeen considers the disease as an inflammation of a severe kind; he employed an active treatment agreeably with this view, which he found to a considerable extent successful. M. Doulcet of Paris advised emetics of ipecacuanha to be daily repeated until the severity of the symptoms was subdued: this disease had proved very fatal at the Hôtel Dieu; but on adopting this treatment, almost every case did well; but the success of the remedy depends on its being given at the very commencement of the attack. It is a severe inflammatory disease, and will bear depletion, which must be employed early and boldly, whether in its sporadic or infectious form. The reason why this treatment was not found more successful formerly was that it was not resorted to till too late, or it was employed with timidity: sometimes also other diseases were mistaken for puerperal fever. Dr. Butter of Derby, who has written on puerperal

fever, has evidently confounded other diseases with it: in his account of it he says, that it goes on for four or five weeks, and that the pain in the abdomen is not constant. These two remarks convince me that he has not correctly distinguished the disease; for in puerperal fever the pain in the abdomen is constant; and if the disease is not subdued in a week, it will kill the patient. The disease which Dr. Butter describes is a slow remittent fever, unattended with peritoneal inflammation, but connected with visceral disorder: this I have seen, and here bleeding would, I think, generally be prejudicial. Dr. Armstrong and Mr. Hey, jun., whose books on this subject are worth reading, at first attempted to cure puerperal fever by the stimulating plan, considering it a low disease: they found this treatment unsuccessful, and abandoned it for the depleting system, the results of which were much more favourable. Enquire among practitioners old enough to have had experience, yet young enough to be unbiassed by the notions of our fore-fathers, and they will tell you that it is decidedly an inflammatory disease, the acute stage of which is of short duration. I therefore say, that the disease must be treated by bold and early depletion; and the more I see of it, the more am I convinced of the propriety of the maxim, "hit hard, but hit early." Lose no time in the vigorous employment of depleting measures, for the acute stage will often pass away in twenty-four hours, nay, if violent at its commencement, in twelve hours, when the patient is beyond the reach of art: generally speaking, in twenty-four hours the time for *active* depletion is over. As soon as the rigors have ceased, and the hot stage has commenced, if the patient is

robust, immediately take away from twenty to thirty ounces of blood from the arm; it is important that this should flow in a full stream, let the orifice therefore be large, and not like the prick of a pin. It is desirable that the bleeding should produce syncope; if, therefore, the patient does not faint when sixteen ounces have been abstracted, set her upright in bed, and if she then faints, do not attempt to rouse her, but allow the syncope to continue: on her recovery, you will probably find that the pain and all the previous symptoms have ceased. Leeches, succeeded by hot fomentations or poultices over the abdomen, and often repeated, will now be of considerable benefit, by unloading the minute vessels of the part. The next important object is to excite free and copious purging, which will be effectually done by giving ten grains of calomel, followed every two or three hours by two or three drachms of the sulphate of magnesia and a few grains of jalap, either in water or in two ounces of infusion of senna. Dr. Armstrong begins with half a drachm of calomel. If in six or eight hours the symptoms should increase, you must bleed again to the amount of sixteen or twenty ounces, or in proportion to the severity of the disease. The patient must be seen a few hours after the first bleeding; for although after syncope the pain and other symptoms appear to cease, yet on the renewal of the circulation they may return with perhaps their previous severity. By the early employment of these vigorous measures the disease will in general be subdued in a few hours, and the fate of your patient is determined. After another interval of six or eight hours depletion by general bleeding is seldom proper; but if a third

bleeding is indicated by the state of the pulse, tenderness, &c. of the abdomen, let it be a cautious one; you may with benefit in place of it put on a regiment of leeches over the abdomen, two or three dozen, allow them to draw as long as they will, and foment the bowels frequently after they come off, or cover the abdomen with a bag of scalded bran, which is light, and retains the heat; this is to be renewed as often as may be necessary: give the liquor ammoniæ acetatis in large doses, with sulphate of magnesia, jalap, senna, or castor oil, every three or four hours, so as to procure daily five or six evacuations from the bowels, till the disease is arrested; and let the diet from the commencement consist of gruel, barley water, and tea. See your patient eight hours after the second bleeding, and if she is not saved by this time, her destiny is in general settled; she will not be saved at all. Something, however, I think, might be done for our patient after we have fired our heavy shot. The Continental practitioners recommend calomel and opium every six hours after bleeding. Calomel, as an anti-inflammatory remedy, has a powerful influence over many acute diseases; it has a specific influence in acute iritis, in croup, inflammation of the liver, &c.; and it is said to have as specific an effect in puerperal peritonitis. It should be given in five grain doses every four hours, until it produces its specific action on the system. Should violent purging or griping come on during the employment of calomel, small doses of opium may be combined with it, or given at intermediate periods. When the system becomes under the peculiar influence of mercury, the symptoms speedily subside, and the recovery of your patient is

rendered much more probable; the remedy is now to be withdrawn, or repeated in smaller doses, and at longer intervals: mild aperients are now to be regularly employed.

Peritoneal inflammation often follows puerperal convulsions. Many of the sporadic cases originate from irritation, produced by the contents of the bowels; when the symptoms will be rigors, followed by heat of skin, quick pulse, and tenderness of the abdomen. The patient enters the lying-in chamber with bowels which have for some time been but partially evacuated; and though these symptoms when they occur may be relieved by bleeding and aperients, yet the recovery of the patient is incomplete till, perhaps after a large dose of castor oil, there is discharged a load of indurated fæces, which have been for a long time accumulating, and will not be removed by saline aperients. *Active purging is in all cases as essential as bleeding.* If the symptoms of this disease are connected with a loaded state of the bowels, the chief point is to empty them; but although this moderate form of the disease may yield immediately to purging and warm fomentations, yet if it threatens any considerable degree of violence or danger, it is best at once to adopt those vigorous measures just recommended, which will alone be sufficient to resist it.

Section II. *On Inflammation of the Uterus.*

Inflammation of the uterus may be excited by local injuries, by cold, and other causes; and there seems rather a particular disposition to it after uterine

hemorrhage. In this disease the pain in the abdomen is less diffused than in peritoneal inflammation, being confined chiefly to the lower part of the belly; the uterus forms a large, hard, circumscribed tumour, which is extremely painful on pressure, reaching almost to the umbilicus. Some of the symptoms of this disease, as rigors, succeeded by a hot skin, rapid pulse, and sometimes vomiting, are common also to puerperal peritonitis; but inflammation of the uterus may be distinguished by the situation of the pain, which is confined to the hypogastric region, and also by the cessation of the lochia. Inflammation of the uterus is often accompanied by considerable irritation of the bladder, with strangury; if it is not attacked early, and with vigour, gangrene of the inner surface of the uterus is likely to take place, and the patient will die about the fifth day. The uterus is found, on examination after death, to be very large; its parietes are much thickened, and its inner surface exhibits a gangrenous appearance. Inflammation of the uterus may exist in different degrees, and it is often combined with peritonitis; but when a simple disease, in general it yields readily to active remedies. The treatment is the same as that just recommended in puerperal peritonitis; the safety of the patient will depend on early and bold depletion. In both affections the rule is the same: bleed freely in the commencement, and keep up an adequate purging; and you will not, upon an average, lose more than one patient in seven.

Section III. *On Puerperal Mania.*

Nervous irritation is very common after delivery, more especially among fashionable ladies, and this may exist in any degree between mere peevishness and downright madness. Some women, though naturally amiable and good tempered, are so irritable after delivery that their husbands cannot enter their bed-rooms without getting a curtain lecture; others are thoroughly mad. I lately attended a lady who was fond of music, poetry, and painting; even during labour she amused herself by reciting poetry. A few days after delivery, she had an irritated pulse of a hundred and twenty in a minute; she said she felt quite well, and was not aware of any derangement of her health. This nervous excitement continued for several days, she then became delirious, she could not sleep, and her pulse got up to a hundred and thirty. I expected she would have had puerperal mania, but happily this irritability of the system subsided, and she was soon well. When puerperal mania does take place, the patient swears, bellows, recites poetry, talks bawdry, and kicks up such a row that there is the devil to pay in the house: it is odd that women who have been delicately brought up, and chastely educated, should have such rubbish in their minds. This disease seldom impairs either the mind or the body; generally speaking, you may put it down in your memory, that these cases end well in a few weeks, but sometimes not till the expiration of a few months. It is possible, however, that puerperal mania may terminate fatally, or it may be injurious both to the body and mind. The fatal cases seem to be those

in which there is considerable disturbance of the circulation, together with inflammation of the membranes of the brain: I have seen three cases of this kind; but those dependent merely upon nervous irritation do well. I once attended a patient with an eminent accoucheur, who thought this disease was never fatal, and in his prognosis, told her friends she would recover; the patient, however, died.

A patient suffering under puerperal mania must be kept extremely quiet, and every precaution must be taken to prevent her doing injury to herself, to the infant, or her friends. There is a great propensity to suicide; the windows, therefore, must be secured, and every thing must be removed, down even to her garters, with which such a purpose may be effected: if any thing of this kind is placed within her reach, she will probably secrete it, and wait for an opportunity of employing it. If necessary, a straight waistcoat must be put on; let a careful and experienced nurse attend her: the disease must, in great measure, be allowed to run its course, and this is what happens with those who profess to cure it. The best attendant is a nurse who has been accustomed to similar cases, who is familiar with their mischievous propensities, and can anticipate their plottings. In this disease the alimentary canal is apt to become loaded, and the nervous system is irritated in consequence; it is therefore necessary to administer purgatives so frequently as to prevent any accumulation in the bowels. As to bleeding, it is not necessary, unless there are obvious symptoms of congestion of the brain. I believe the best and most successful treatment in these cases consists in taking care of the digestive organs;

the bowels should be kept regularly evacuated, and the secretions should be brought to a healthy state, by exhibiting mild preparations of mercury: in addition to this, keep the patient as tranquil as circumstances will admit. Can you *prevent* puerperal mania? A lady, a few days after labour, became maniacal. The symptoms subsided in about five weeks, and she got well. She again became pregnant, and I attended her, but was ignorant of her former malady, until the nurse informed me of it in the progress of the labour: and if hereditary predisposition has any thing to do with this disease, this must have been an emphatic instance; for nearly all her relatives were mad, or had died mad; and to keep up the breed, this lady had married a gentleman whose family were equally mad. After her first labour, her friends thinking it a time for merriment and rejoicing, were footing it about the house, which resembled a rabbit warren. I determined it should this time be otherwise, and succeeded in keeping the house quiet. She was delivered easily, and did well for the first ten days; when, as the devil would have it, a fire broke out near the house in which she lived. The attendants very properly kept her ignorant of the circumstance; but in the evening she saw some sparks flying about: almost immediately after this I happened to call, thinking the family would be in a state of alarm; she looked and talked rather oddly, and the paroxysm was evidently coming on. I slept in the house that night, and at two o'clock was called up. On entering her bed-room she said, "Who's there?" I merely answered, "Dr. Gooch." She replied, "Sit down—now look at my forehead, do you see any thing?"—"No,

ma'am." "Look again."—"I see nothing there:"—then clasping her hands, with a whining, methodistical tone, she exclaimed, "Then I was presumptuous; I am deceived; I thought a glorious light issued from my temples, and that I was the Virgin Mary." I took away a few ounces of blood, by cupping on the head, over the sutures, but with little benefit. Her bowels were attended to, and at the end of three weeks she was quite well, without seeming to have been cured by any thing that was done. This lady again became pregnant, and about three weeks before delivery I called to see her: there was evident derangement of the hepatic function; she had white stools, yellow eyes, and a jaundiced face, and passed yellow urine. I gave her one grain of calomel every night, with five grains of the pil. aloës cum myrrhâ, which produced two or three evacuations daily; this plan was continued also after delivery, and she had no maniacal affection. When, therefore, it is known that there is a disposition to this complaint, endeavour to prevent it, by administering, both before and after delivery, some purgative, combined with an alterative dose of mercury, by which a regular action will be kept up on the bowels. A lady, who had for some time been maniacal, was confined by a strait waistcoat, and had been accustomed to evacuate her bowels in the bed; an active purgative was given to her: soon after taking it she said, "Nurse, let me go to the water closet;" and the nurse, astonished at this rational request, unloosed the straight waistcoat, and led her to the water closet adjoining, where the bowels were relieved of a prodigious load of feculent matter: she very soon after recovered perfectly. Such medicines

as effectually clear the alimentary canal are the most beneficial in these cases. The disease is of a chronic kind, but it is rarely fatal; patients have, while it continues, the most strange ideas imaginable: you must not, on any account, combat these fancies by argument, for they will defend their absurdities stoutly, and your attempt to correct, will serve only to confirm them. You must draw their minds from their morbid fancies by engaging them on some other subject. I would rather allow a patient to think her legs were made of straw, and her body of glass, than dispute either proposition. A lady who suffered for some time under puerperal mania, was at length removed from her friends, and placed in a mad-house near London: she attempted several times to destroy herself, and it was necessary to keep on a strait waistcoat. She once drank about an ounce of dilute muriatic acid; but as she had just before taken a pint of fluid, though her throat suffered, her stomach was not injured by it: half a drachm of sulphate of zinc was immediately given, which fully evacuated the stomach, and the acid did no material harm. She also tried to swallow sponge, and to prick her arteries and veins with pins: at length she became impressed with notions of the most gloomy description; of her having committed crimes which had brought ruin and disgrace on herself and her family, and which had occasioned the death of her husband and children. Thus she went on for some weeks without any favourable change, when the husband wished to see her: the doctor who conducted the establishment did not approve of it, but the husband said his wife believed him dead, and he wished to ascertain if his

presence would correct this notion. The doctor said it would only confirm it, and that his wife would say he was a spirit: however, the husband was permitted to see her, and was accordingly announced by the nurse: she was violently enraged, and said to the nurse, "You insult me—he is dead." On the husband walking into the room, she uttered a loud shriek, ran to a corner, hid her face, and said, "You are a supernatural being." On looking up, a gleam of hope and despair seemed alternately to engage her mind; he tried to convince her of his being a corporeal reality, but to no purpose, which confirmed the doctor's prediction. He then endeavoured to withdraw her mind from the idea of his death: he took her arm and walked about, and changing the subject, familiarly said, "How do you think I have been living since I saw you?" she instantly replied, "Tell me:" he led the conversation to the manner in which they had both formerly lived, talked of their children, &c.: she appeared interested; and when he thought he had gained possession of her mind, he suddenly asked her, if she now thought him a ghost; and she burst into laughter. He thus convinced her that he was not dead, and restored her to a state of perfect sanity:—he dined, drank tea, and supped with her, and she was perfectly rational; he went the next day to see her, and found her quite sane. Her attendants were astonished at the sudden change. Do not argue with them, but with dexterity of address divert their minds from maniacal ideas, which, together with sea-bathing, and constant attention to the bowels, will prove the most successful method of treating this disease.

Puerperal mania sometimes occurs after puerperal convulsions; it is then generally fatal.

Section IV. *Phlegmasia alba dolens Puerperarum; or, the swelled Leg of lying-in Women.*

This is a singular and obstinate complaint, and is one of the latest to which lying-in women are liable: it seldom occurs in less than a week after delivery, and sometimes not in less than a month. The attack is not preceded by loss of appetite, or of sleep: immediately preceding it your patient may look well, but her pulse will be found very quick; from which circumstance you may apprehend either phlegmasia dolens, milk abscess, or mischief of some kind. But with or without precursory symptoms, the swelling of the limb is attended with pain and fever. The pain is generally confined to one part, as to the groin, the thigh, or the upper part of the calf of the leg, and it is accompanied by rigors, heat of skin, and a rapid pulse: these symptoms continue from twelve to twenty-four hours, constituting the first stage of the disease. The second stage then begins: the limb swells from the painful part upwards and downwards; from the toes to the groin it is hard, but does not pit, as it is termed, on pressure: it has a shining appearance; presents to the touch the sensation of many slight irregularities; it is painful on pressure; and has every character of inflammation, except that it is white, instead of red. There is now loss of appetite, with general constitutional derangement: these symptoms continue for eight or ten days, which is about the duration of the acute stage of the disease. The

pain, heat of skin, and quickness of the pulse, now subside; there ensues much constitutional debility; the limb is less tender to the touch, but is still greatly swollen: this may be called the third stage of the disease, which continues a long time. Very slowly the limb regains its accustomed size and strength; the patient limps for a considerable period, during which she gradually recovers her health. This complaint is in general confined to one extremity, though it sometimes affects both in succession: the labium only of the affected side participates in the swelling, while the other remains in its natural state.* The disease rarely terminates in suppuration.

Phlegmasia dolens has been supposed to proceed from inflammation of the absorbent glands in the groin which are generally found to be enlarged, by which the passage of lymph is obstructed; the lymphatics become in consequence distended, burst, and their contents are effused into the cellular substance of the limb. This disease occurs after easy, as well as after difficult labour; and as it is not fatal, no anatomical facts relative to it have been ascertained. If called upon for a prognosis, you may promise a favourable result; though you must give your patient and her friends to understand that it is a complaint usually of very long continuance.

* This circumstance is considered by Mr. White of Manchester as the pathognomonic symptom of the disease: in his work on this subject he says, "I must beg leave to impress this upon my readers, that when one limb only is affected, the swelling is confined so exactly to the labium pudendi of that side, that if a line were drawn from the navel to the anus, it would be found never to go beyond that line in the smallest degree." Part ii. p. 7.

In the treatment of this disease there are three principal indications: to subdue it in the first stage; if this cannot be done, to shorten the duration of the second stage; and to promote the absorption of the effused lymph in the third stage. If the patient is seen in the first stage before the tumefaction begins, you may sometimes succeed in arresting the progress of the disease, by the application of ten or a dozen leeches to the painful part, and by giving a brisk purge of calomel, jalap, and senna. Let the leeches remain on until they fall off, and then promote the bleeding by fomentations with hot vinegar for several hours. But you may ask, "How is it to be known that the patient would have had this complaint, if these remedies had not been employed?" All medical evidence leads only to supposition: if you look for mathematical proofs you will be disappointed. Should this treatment not succeed, or if the second stage has commenced before you see the patient, you must, notwithstanding, apply leeches to the most painful part, and give sudorific medicines, as the liquor ammoniæ acetatis, tartarized antimony, together with purgatives: the diet must consist of gruel, &c., with abstinence from all animal food and fermented liquors. It is recommended by some, after a copious bleeding by leeches, to give one grain of calomel with two or three of antimony, and half a grain of opium every five or six hours, and to apply several blisters in succession to the part affected. After about ten days the inflammatory symptoms have generally subsided; yet the limb is still perhaps double its natural size. The treatment now indicated consists in the employment of those means which are at once

calculated to restore the patient's strength, and to promote the absorption of that which has been effused into the cellular membrane of the limb. The former object will be promoted by country air, gentle exercise, nutritious diet, acid, and bitter tonics; and the latter by friction with stimulating liniments, aided by the pressure of a regularly and well applied flannel roller. Strapping the limb from the toes to the groin with adhesive plaster has an excellent effect; I have seen the size of the limb diminish rapidly under this kind of bandage. I have known an instance of the occurrence of this disease after abortion. There is reason, I think, to believe that an unhealthy and irritated state of the uterus, attended with fetid discharge, may give rise to this complaint; take care, therefore, to have the vagina well cleansed of the lochial, or other fetid discharges, by the use of a syringe and warm water. I have seen this disease ensue from the application of a ligature to a polypus uteri, which has been followed by a highly fetid discharge.

I have sometimes met with a disease very much resembling phlegmasia dolens: with the exception, however, that the limb does not swell; there is considerable pain shooting from the groin down the thigh, which is attended with fever. The constitutional treatment of this affection will consist in the exhibition of purgatives, sudorifics, &c.; and I have found a circular blister round the thigh, just above the knee, like a garter, productive of great benefit.

Section V. *Inversion of the Uterus.*

I formerly stated certain rules for the management of the placenta, and observed that any deviation from these rules might occasion hemorrhage or inversion of the uterus: of the former I have already spoken, and have now to call your attention to the latter. After the expulsion of the child, the uterus, not immediately contracting to expel the after-birth, remains large and flaccid: in this state it is surprising how slight a degree of force applied to the cord will invert the uterus, or turn it inside out. A practitioner informed me, that in one instance he inverted the uterus by merely putting the cord on the stretch. Dr. William Hunter used to say, when the uterus was in the state just described, it was as easily inverted as the finger of a glove; but when it was contracted, it was as difficult to invert as a jack-boot.

Inversion of the uterus may take place in different degrees, in proportion to which the symptoms of its occurrence will be manifest. If, after the removal of the placenta, hemorrhage takes place, with violent and rapid pains, which may seem to be after-pains, attended by a sense of bearing-down, and of bulk and fulness in the vagina, you may suspect inversion of the uterus to have taken place. The pain and irritation which this complaint occasions, sometimes, independently of hemorrhage, induce frequent syncope, convulsions, and death. Should your patient suffer from the symptoms just mentioned, an examination must immediately be resorted to; and in proportion to the degree of inversion, so will it be more or less

readily ascertained. The fundus of the uterus may be merely depressed, forming a large dimple like the bottom of a wine bottle. In this case, making a common examination per vaginam will not do; but you must pass your hand into the vagina, and your fingers into the cavity of the uterus, when you will feel the convex portion of the inverted uterus: by an examination externally, also, the uterus will not present its usual defined roundness; but a considerable depression will be felt at its fundus. This slight degree of inversion is the most difficult of detection. When the inverted portion has descended on, or protruded through, the os uteri, it is easily felt. It sometimes descends so low that there is a tumour projecting through the os tincæ into the vagina, large and round, somewhat resembling the head of a child, for which, and also for a polypus, it has been mistaken. The tumour, however, will be distinguished from the head of a child by its being very sensitive and much softer; and from a polypus, by its being sensitive. The inversion is sometimes such, that the uterus protrudes through the external orifice, and hangs like a calibash from between the labia. This displacement is often produced by improper force applied to the umbilical cord: the expulsion of the placenta is tardy; the accoucheur passes his finger through the vagina and os uteri, and does not feel the placenta,—it is high up and attached,—he waits; but getting impatient, puts the cord on the stretch, using, perhaps, but trifling extractive force, and down comes the placenta into the vagina: he examines, and finds it adhering to something: this is the uterus turned inside out; and, in this case, the accident will be ascertained before it is denoted by

symptoms. If the uterus be inverted, and the whole surface of the placenta still adherent to it, there will be no hemorrhage; but if the placenta is partially adherent only, hemorrhage will take place. The uterus can never be inverted without great danger to the life of the patient. If hemorrhage does not kill her, the inverted portion will become strangulated by the os tincæ, which acts on it like a ligature, and inflammation will follow, terminating, probably, in gangrene and death. But suppose the patient escapes these evils, and the uterus remains still inverted,—the art of man cannot restore it to its natural situation: she is liable to frightfully profuse menorrhagia, incurable leucorrhœa, and severe constitutional affections, which hasten her to the grave. Some women (rare exceptions,) have not suffered materially in their health from a chronic inversion of the uterus; but, however fortunate a woman may be in other respects, her vagina will be plugged up. Most cases of inverted uterus are produced by improper pulling at the cord. It is said that it may also occur spontaneously: the child may be expelled quickly, and the cord may be shortened by being twisted round its neck; or it may naturally be very short; thus, the placenta is pulled down, and the fundus uteri follows with it: but, generally speaking, this serious complaint is occasioned by mismanagement on the part of the midwife. The dangers resulting from inversion of the uterus are these: first, profuse and dangerous hemorrhage; secondly, inflammation of the inverted portion, terminating in gangrene: these dangers follow quickly on delivery; but, if the patient escape them, she is still liable to profuse menorrhagia and leuchorrhœa; and

whether she does or does not suffer from these discharges, she is for life the subject of a disease which renders her unfit for the duties of the marriage state.

The first object of treatment is to reduce the inversion, and there is only one moment in which this can be done with certainty, namely, immediately after the inversion has taken place, when it will be a matter of great facility. But if a few days elapse, Dr. Denman says you will be foiled in your efforts to return the uterus to its natural situation; he has often attempted this after such an interval, but never succeeded; he has sometimes found it impracticable even a few hours after the displacement has occurred; hence we perceive the great importance of its being detected early. If the uterus has descended into the vagina, or protrudes externally, the inversion is ascertained easily, but is reduced with difficulty; if the inversion is in a more trifling degree, resembling, as I have before said, the dimple at the bottom of a wine bottle, it is detected with difficulty, but reduced with ease. In this latter case, to return the inverted portion, the patient is placed across the bed, the hand of the accoucheur must be introduced into the vagina, and the os uteri gradually and carefully dilated, so as to admit the passage of the hand into its cavity; the uterus is to be steadied by the other hand applied externally, and the dimple, or inverted portion, may be thus readily replaced. By friction and pressure on the abdomen you now excite the uterus to contract, but remember, *you must not withdraw your hand until it is almost expelled by the contraction of the uterus.* If a complete inversion of the uterus has taken place, the reduction is not so easy; and

should the placenta be still adherent, it becomes a question whether to separate it, and return the inverted uterus, or return the uterus with the placenta attached to it. If you attempt the reduction with the placenta adherent to the uterus, the bulk being thereby augmented, the reduction will be the more difficult; on the other hand, if you peel off the placenta previously to returning the uterus, you may have to encounter a most frightful hemorrhage, which is the greater evil of the two. First make an attempt to replace the uterus without separating the placenta from it, and if you succeed, so much the better; then by external friction and pressure excite the action of the uterus to separate and expel the placenta; but if the difficulty of reduction, while the placenta is attached, should prove insurmountable, you must then incur the risk of hemorrhage by first separating the placenta, after which the uterus is to be returned with all practicable celerity. The same rule of practice is to be observed whether the uterus remains in the vagina, or protrudes through the os externum; you must, however, in the latter case, first return it within the vagina, and press it against the os tincæ, which constricts it like a ligature; if you push it with violence you will not succeed; you must, if possible, grasp the whole tumour in your hand and steadily compress it: when you find it shrink, or contract within the hand, this is the moment you are to press it against the os tincæ, not upwards and backwards, but in the direction of the upper axis of the pelvis, upwards and forwards towards the præcordia; the hand being carried through the os uteri into the cavity of the uterus, its natural position will be easily

restored; the hand, as before directed, must not be withdrawn *till it is almost expelled by the uterus, or until the uterus is firmly contracted.* If you neglect this complaint, or overlook it, or are called to a patient a few days after its occurrence, the reduction of the uterus should certainly be attempted. Hunter, Ford, and Denman have failed in this attempt; but some practitioners have been more successful. If several days have elapsed, it is likely that the uterus will be found inflamed, hard, and painful to the touch; in this state you must not attempt its reduction, as you would not only increase the inflammation, but may induce convulsions. You must now wait, and have recourse to the antiphlogistic treatment, consisting of bleeding, purging, low diet, and tepid fomentations, together with the recumbent posture: in a few days, the inflammation having subsided, the uterus becomes soft, and its orifice flaccid, and now you must attempt to replace it; but if many days have passed, the probability is, that you will not succeed. What will you do in chronic inversion of the uterus? The patient is liable to profuse menorrhagia, and leucorrhœa, and her vagina is plugged up; she suffers also symptoms of constitutional exhaustion from uterine irritation, and the loss of fluids. Tepid fomentations must be used for the purposes of cleanliness, and astringent lotions, with acid and bitter tonics given internally, should be employed to lessen the discharge. I fear you will find these remedies of little use, for the patient's suffering will end only in the grave. The great object will be to palliate symptoms as they occur: thus, if the uterus descends, it must be supported in the best manner you can; and if there is retention

of urine it must be drawn off. It has been proposed in these cases to amputate the inverted portion of the uterus: the death of the patient is otherwise inevitable, and by this operation you may give her a chance; it may save, or it may kill her; there are many cases on record in which the uterus has been removed with success.* Some time since a case of inversion occured in which several days elapsed before it was discovered; the medical men agreed that nothing could be done: the patient was sent from London into the country for the benefit of the air; the country surgeon, whether from boldness or ignorance, put a ligature round the neck of the tumour; in due time the uterus came away; the patient did well, and is now living. A medical man had the curiosity to enquire concerning the state of her sexual passion, and was informed that the loss of the uterus made no difference in this respect.

LECTURE THE SEVENTH.

ON THE GENERAL MANAGEMENT, ON THE MALFORMATIONS, AND DISEASES OF INFANTS.

SECTION I. *General Management of Infants.*

As soon as the child is born, the function of respiration most commonly begins, the child gasps,

* A successful case of extirpation of an inverted uterus by Mr. Windsor, communicated by Mr. Astley Cooper, is related in Med. and Chir. Transactions, vol. x. p. 358.; also by Dr. Joseph Clarke

inflates its lungs, and cries. Sometimes, however, it remains motionless, there is no rising of its chest, and it has a livid appearance; but there is a pulsation in the cord, and the heart beats, by which we know that the child is alive. In this state, the muscles of respiration do not act, and the child is in danger of being lost from asphyxia. There is great reason to believe, when the uterus wholly expels the child, that the placenta, in nine cases out of ten, is separated by the time the feet are expelled. When respiration is not commenced immediately on the birth of a child, what are you to do? You must excite the action of the respiratory muscles, taking care in the mean time that the child's animal heat be not lost. These intentions are fulfilled by inflating the lungs, and by putting the child into a warm bath. During the first five minutes after its birth, the heat of the child is not likely to be much diminished, therefore first inflate the lungs. This may be done either by placing your mouth to that of the infant's, and blowing into it, or by blowing through a tube, or by means of a small pair of bellows: the first is the readiest mode; the last the best, for the reason that the lungs are then inflated with pure air. If you attempt the inflation of the child's lungs through its mouth, you first stop both nostrils, and press the thyroid cartilage gently back against the œsophagus, to prevent the passage of air into the stomach. If you employ the bellows, the proceeding is the same, with the exception that the

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in the Edinburgh Med. and Surg. Journal, vol. ii. p. 419.; and another case by Mr. Alexander Hunter in Duncan's Annals of Medicine for the year 1799, p. 366.

pipe of the bellows is to be adapted to one nostril, while the other, as well as the mouth, is closed. The lungs are to be inflated slowly, and then press the chest, in order to expel the air. These operations are performed alternately, so as to imitate, as nearly as possible, the natural ones of inspiration and expiration. If in three or four minutes the child does not exhibit the customary signs of animation, immerse it in a warm bath of ninety-six degrees, and go on stimulating the powers of respiration in the manner just directed. In five or ten minutes the child will generally be restored by this proceeding; but if your exertions are not successful within this period, you must persevere for half an hour, or you will perhaps get into a scrape. A relation of mine was delivered of an infant, still-born as they call it: means were used to revive it, but without effect; it was given to the nurse to be put aside: sometime afterwards it began to cry. Smellie relates a similar instance. It is by some supposed that respiration is performed in these cases, but so feebly as to be imperceptible to us. Respiration may sometimes be excited by applying stimulants to the child's nostrils: a nurse would give it a pinch of snuff; the best method is to wet a handkerchief with spirit of ammonia, and so hold it that the vapour may ascend through the nostrils; the child gasps and inflates its lungs: this will often succeed after other means have failed. If the child has a swollen, red, or livid countenance, you had better let it lose a few drachms of blood from the funis before tightening the ligature, which will relieve congestion about the brain, and facilitate respiration. Sometimes the child is born dead, and has manifestly been so

many days; on such occasions any proceeding for its recovery is of course superfluous.

As soon as the child is born, the mother generally asks if it is perfect? This should be ascertained by a general examination; and if there is any defect or malformation, the mother should be now informed of it, for she will bear the knowledge of it better at this time than afterwards.

What is the best method of ensuring the health of infants? First, let them breathe pure air. Secondly, feed them with diet of nature's cooking, the mother's milk. Thirdly, keep them religiously clean; and by adhering to these directions, you will prevent a very large proportion of the diseases of infants. Nearly as soon as the child is born, you should direct a small tea spoonful of castor oil to be given to it, for the purpose of evacuating the meconium. The first stools are dark-coloured; in about twenty-four hours they become yellow, and of the consistence of thin mustard. As long as the child is in health, it will have daily two or three of these evacutions.

There are two modes of rearing children; one by hand, as it is termed, the other by the breast: the latter, when the breasts afford an adequate supply of milk, is by far the best. Among savages children depend wholly for nourishment on the breast, perhaps during the first two or three years. This also is not uncommon in civilised life; but the secretion of milk in some females, from feebleness of constitution, is not sufficient for the support of the child; or the secretion ceases altogether, as from illness after labour; or the time necessary for suckling, in other instances, cannot be spared from the claims of fa-

shionable life: the child must then be reared on artificial food, or by a wet nurse. Cows' milk contains more curd and less sugar than human milk *; I therefore direct an artificial milk, which approaches in quality that of the mother, consisting of two thirds of cows' milk, and one third of water, to which a little sugar is to be added. This forms a very good substitute, and it should be made fresh as often as the child requires it. Biscuit powdered and boiled with milk, water, and sugar, is also well suited to the delicate stomachs of infants. The French prefer diluting cows' milk with an equal quantity of fresh whey. Arrow-root, of all vegetables, is the least disposed to fermentation, and it forms an excellent food either with milk, or with water, and a little sugar. In London, if you attempt to rear children by the hand, not more than three in twelve will live to be two years old. Children should be fed at as regular intervals as possible. The periods of nursing ought also to be as regularly observed as circumstances will admit, and their stomachs should not in either case be much filled at once. If it is determined to hire a wet nurse, a woman under thirty should be preferred; her appearance should be perfectly healthy, and her temper good, as the secretion of milk is materially affected by irritability and passion; she should have large breasts, and a copious supply of milk. It will also be of much advantage that the nurse has not suckled long previously, and her nipples should be sound and well formed; her diet should be nutritious and of the most simple and natural kind. But I believe the

* Human milk is said to be the lightest known nourishment except asses' milk.

best method of rearing children when their mothers cannot nurse them, is by allowing them to suck a domesticated animal. I know a fine healthy young lady, now about seventeen years of age, who was thus reared. A goat is the best animal for this purpose, being easily domesticated, very docile, and disposed to an attachment for its foster child: the animal lies down, and the child soon knows it well, and, when able, makes great efforts to creep away to it and suck. Abroad the goat is much used for this purpose; the inhabitants of some villages take in children to nurse; the goats, when called, trot away to the house; and each one goes to its child who sucks with eagerness, and the children thrive amazingly. It is very common in this country for people to give their children the worst food possible; this consists of flour boiled in milk, which when taken into the stomach ferments, and fills the intestinal canal with flatus and acidities. If animal food of any kind is given to a child during the first nine months, it will tend to injure its health. If my patient is not able wholly to nourish the child, whether from deficiency of milk or delicacy of constitution I direct her to suckle by day, and to feed the child with the artificial milk just recommended by night. This latter duty may be performed by the nurse, which permits the strength of the mother to be renovated by unbroken sleep.

If the child is well, vaccinate it between the first and third month after its birth: never vaccinate from dry lymph, when you can use it in a fluid state, which will be much more likely to take effect.* In three

* Whether the lymph is in a fluid or dry state, it will rarely fail to take effect if the point of the lancet is inserted obliquely

days there will be at the place of the inoculation, if it succeeds, an elevated red point, which will gradually increase in size to the eighth day, when there will be an elevated but flattened vesicle, with a depression in the centre, and there should be a bright red areola surrounding the whole vesicle. If the vesicle is punctured, a thin transparent lymph exudes, which is in a fit state for use; by the tenth day, the vesicle has become brown and crusty in the centre, and the process of scabbing gradually spreads to the circumference, so that by the twelfth or fourteenth day it is brown and hard all over: in a few days more the scab falls off, leaving an indelible white scar. Every deviation from these appearances is irregular, and as such must be regarded. Vaccination should be performed in three or four places, by way of rendering it as effectual as possible; and one vesicle at least should be allowed to pass through all its stages without being punctured. The cow-pox is not an infallible preventive of the small-pox; if it were, it would be the only thing infallible in human nature; but if it is a preventive in ninety cases in a hundred, it must be considered as a very valuable resource. In one or two years the security of the constitution may be tested by repeating the vaccination, or by inoculating with the small-pox virus: if there exists a susceptibility to be affected by the latter, it is better that the disease should be produced by inoculation, than that it should occur in the natural way.

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nearly the eighth of an inch under the skin, and suffered to remain there for a minute or two; the lymph will thus be dissolved · and if the thumb is placed upon the skin, covering the point of the lancet while it is withdrawn, the whole of the lymph will be wiped off and retained in the wound.

Section II. *Malformations of Infants.*

The treatment of the malformations of infants chiefly belongs to the province of surgery; I shall therefore offer upon some of them only a few general remarks.

(a.) Hare-lip.

When is the proper time for the operation for the hare-lip? I have seen it done at the end of seven weeks after birth with success. I should recommend it to be done at the end of three months, when it may generally be performed with perfect safety: if, however the malformation is of the worst kind, it should be postponed to the end of a twelvemonth. The earlier the operation is performed, the less conspicuous will be the scar. The palate is sometimes very defective in these cases, and the hare-lip is double, as it is termed; the operation in these instances is very severe, and the success rarely complete. The defect is frequently such that the child cannot suck; it must then be nourished by artificial food, in the manner formerly directed.

(b.) Defects of the Umbilicus.

Protrusion of the bowels, constituting umbilical hernia, is of frequent occurrence; the circular aperture in the linea alba, through which the vessels of the umbilicus pass, is sometimes larger than is natural, and thus admits the protrusion of the intestines. Umbilical hernia generally takes place about two months after birth; the navel should, therefore, be compressed

up to this time, or even longer; for a hernia in this situation is much more easily prevented than cured: however, when detected early and treated in a proper manner, cases of this description in general do very well. Your object is to keep the protruded parts within the parietes of the abdomen for a certain time: if this is effectually done, nature will take care, by closing the aperture, that the protrusion does not again occur. For this purpose, I take a conical piece of cork, fold it in linen, and place it over the orifice, having first returned the intestine: this compress I prevent from slipping by crucial straps of adhesive plaster, and secure the whole by a bandage. Richter's bandage is the best; it is broad and thick in front, and narrow behind. A common flannel bandage placed over the sticking-plaster will do very well. When the defect is only moderate in degree, you may say, if called upon for a prognosis, that it will be well in a few weeks.

The whole abdominal parietes surrounding the umbilicus, including the peritoneum, may be wanting, and the bowels found resting on the thighs of the child*: this is the worst possible malformation of this

* I lately met with a case of this kind, but the malformation was more extensive: the abdominal parietes were entirely deficient; the viscera, which were neither formed nor placed naturally, were covered only by a thin transparent membrane; the liver was on the left side; there were no large intestines; there was no bladder; the left kidney was much larger than the right: in the former, and in the ureter connected with it, there was contained half an ounce of fluid, resembling dark-coloured serum; this fluid was found on analysis to contain uric acid and phosphate of lime. There was no appearance either of external or internal organs of

part; of course it would be irremediable if the child were alive; but in general it is born dead.

(c.) Closed Labia Pudendi.

This defect, which occurs occasionally, may in general be remedied without the use of the knife; the adhesion being slight, the parts admit of being separated by the fingers and thumb. The adhesion is, however, sometimes more firm, and requires division by the knife: the labia are afterwards to be kept separated by the introduction of a tent. At your first visit after the delivery of your patient, always make enquiries whether the child has passed any water or fæces.

(d.) Imperforate Urethra in the Male Infant.

This may be either so slight, that the orifice only of the urethra is closed by a thin membrane, or by small membranous bands, which may be broken down by a probe; or the urethra may be impervious to such an extent as to be irremediable.

(e.) Imperforate Anus.

The anus, sphincter, and buttocks may be complete; yet the gut may be closed by a membrane,

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generation; neither was there any anus. There was a spina bifida at the upper part of the lumbar vertebræ, the cyst of which contained five ounces and a half of fluid. The fœtus, which was dead-born, according to the reckoning of the mother, as well as from its appearance, was supposed to be one of between six and seven months' growth.—Ed.

which will prevent the discharge of fæces: hence the bowels become distended, inflammation and death will supervene. If twelve hours pass without any discharge of meconium, you must examine the parts. You pass your little finger, previously oiled, up the rectum, and you sometimes distinguish a tense membrane closing the gut. When the impediment is merely membranous, and near the external parts, the defect is easily remedied; separate the nates: and puncture this membrane with a trocar, in the direction upwards and backwards towards the sacrum, and the meconium immediately escapes: as soon as the contents of the bowels are evacuated, you must introduce a bougie, which is to be retained, in order that the opening may not become closed. If the child suffers from irritation, or distension of the bowels, give it a tepid enema. When the bowel terminates two or three inches from the anus, you may, if you can feel the place of the termination of the gut, carefully pass up the trocar and puncture: the operation will not in this case be attended with certain success; but a doubtful remedy is sometimes better than no remedy at all. In performing the operation for imperforate anus, a scalpel or Pott's bistoury may be used; but a trocar, I believe, is sufficient, if you are careful not to allow the part to close again, which will require considerable attention. The division of the membrane must be made with caution. A child suffering under this kind of malformation was taken to an eminent surgeon: on introducing his little finger he felt the tense membrane, which he punctured with a trocar, and the meconium escaped; but, not content with this, he took Pott's bistoury, and enlarged the wound in the

membrane, when more meconium came away. The nurse carried the child home, and it was the whole way very quiet. She thought this a proof of the success of the operation, and of the skill of the surgeon, who was capable of giving little children so much ease: when she reached home the child was found dead, and deluged in blood. The surgeon, who could be satisfied only with a large opening in the membrane, had wounded one or more of the hemorrhoidal arteries. If there is no appearance of an anus, an incision should be made with a scalpel or lancet, half an inch deep, in the situation of the natural termination of the rectum; and if no meconium escapes, a trocar may be passed a little deeper; but in the proper direction, backwards towards the sacrum; and the puncture, if successful in making a communication with the intestine, should be kept open by means of bougies, &c.*

* An artificial anus was first made, by an incision of the colon in a child born with an imperforate anus, by M. Durêt, a surgeon at Brest: the report of this case goes so far as the twenty-fifth month, when the child was alive, but suffering from inversion of the gut. (See Sabatier's Médicine Opératoire, tome troisième, p. 336. It was afterwards performed on a child by Mr. Freer of Birmingham, at a time not specified, preceding the year 1817: this child lived three weeks. It was performed by Mr. Freer on an adult in the year 1817. This patient survived the operation about nine days. An artificial anus, by incision of the colon, was also made by Dr. Pring of Bath in the year 1820, in a lady sixty-four years of age, whose rectum was impervious from scirrhus, and who had had no evacuation from the bowels for twelve days. The operation was, in this case, so far successful that the patient passed her stools from the artificial anus, with very little inconvenience, for about sixteen months after the operation; when she

(f.) Spina Bifida.

This malformation consists in a deficiency of a portion of the vertebral column, through which opening the membranous theca of the spinal marrow protrudes, and is covered by the common integuments. The tumour thus formed is distended with a fluid; in a week or two the part sloughs, and the child dies. The tumour varies from the size of a walnut to that of a large orange, and occurs generally about the lumbar vertebræ: the integument covering the part is of a deep red, occasionally with patches of a livid colour. The complaint is generally a fatal one: it is, therefore, proper to inform the parents that the child has a disease, which in all probability will destroy it. Sir A. Cooper punctured a tumour of this kind with a needle and let out its contents: in a few days inflammatory action took place in the cyst, adhesion followed, and the child did well.* In another case of the kind, he returned the tumour into the vertebral canal, applied a truss to retain it there, and cured the child; but subsequent experience has not confirmed the benefits which were anticipated from these modes of practice.

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died from the effects of cancerous disease upon her constitution, the rectum being in part thickened, or almost cartilaginous, but in great measure destroyed by ulceration and sloughing. See Lond. Med. and Phys. Journal, vol. xlv. p. 1, &c.

* See Observations on Spina Bifida, with Cases, by Sir A. Cooper, in Medico-Chirurg. Trans. vol. ii. p. 322.

(g.) Contorted Feet, &c.

Distortions of the extremities generally admit of considerable relief from early and well-applied pressure, by bandages, &c. The foot is sometimes turned inwards, and sometimes outwards.

The fingers or toes may at the time of birth be either supernumerary or deficient; or there may be pendulous excrescences about the ears and face of the child. These supernumerary productions should be removed within a week or two after birth. It is less easy to supply parts which are deficient.

Section III. *Diseases of Infants.*

(a.) Diarrhœa.

This complaint is the most common incident to children. When the digestive organs are in a healthy state, the child usually has two or three motions in the twenty-four hours, of a golden, or patent-yellow colour, and of the consistence of thin mustard. In diarrhœa there is griping, with thin, frequent, and green stools. This disease presents itself in an infinite variety of degrees: it may soon cease, or it may continue for weeks; in the latter case, the child's constitution will suffer greatly: the child becomes pale, thin, flabby, and weak, the whole system suffering from defective nutrition; and if the diarrhœa is not checked the child dies, exhausted by intestinal irritation and starvation.

The treatment is simple: first cleanse the bowels well of their unhealthy secretions and other irritating

matter,—any portion of which, if not effectually evacuated, will keep up irritation, and again produce purging; this being done, we must soothe irritation, neutralise the acids which may arise from a weakened state of the digestive powers, and restore a more healthy action. The cause of this disease must be avoided, which is, almost invariably, artificial food ill suited to the digestive powers of the infant: this is a matter of importance; such food must be prohibited, and the child must derive its nourishment exclusively from a full breast of milk. Some children, to be sure, are born with the stomachs of aldermen, and will digest turtle-soup, or, perhaps, even an old slipper. To clear the bowels, give a dose of the purest castor oil, or a powder composed of three grains of rhubarb, the same quantity of magnesia, and one drop of the oil of aniseed. To soothe irritation, and at the same time to correct acidity, give the common cretaceous mixture, with a little aromatic confection, a dessert spoonful every three or four hours, together with as much tincture of opium in the mixture as will amount to a quarter of a drop at each dose; in addition to, or in substitution of this mixture, we shall often have occasion to promote the healthy secretions of the alimentary canal, by giving small doses of calomel, as two grains of the hydr. cum cretâ with three of the compound powder of tragacanth, twice or three times a day: this will often remove the most obstinate infantile diarrhœa. The most important indication in the cure of this disease, is the dietetic, improper food being, in general, the cause of it. Children are often fed with animal food before their stomachs are capable of digesting it: this happens most frequently

when the mother is unable or unwilling to nurse the child, and therefore brings it up by hand; thus the child is crammed with gruel, vegetables, tripe, oysters, beef, and the Lord knows what. After you have tried your remedies in vain, even under these circumstances, if possible, get a nurse with breasts spouting with milk; the infantile diarrhœa will speedily be cured, and often in twenty-four hours the stools become of the true patent-yellow colour. A healthy nurse, who has a plentiful supply of milk for the child, effects the most rapid cure. This change of diet I have known repeatedly successful after drugs have failed. It sometimes happens that the child is disordered in its bowels and general health, and its body wastes; on being consulted, you may represent this state as the consequence of improper diet; the stools now appearing healthy, you may perhaps be laughed at—but I say, do not crow too soon. After a little while, if the same food be continued, diarrhœa will come on; and after trying in vain to cork up the bowels by astringents, &c., you are at length obliged to abandon them for a good breast of milk, when the disease will be speedily cured. Often do I see old and experienced practitioners, who ought to know better, attempting that which is utterly impossible; wholly neglecting this most important point, the diet, and giving their useless medicines. I always order the child to be nursed on food of nature's cooking, which alone is almost invariably attended with success.

(b.) Watery Gripes.

Instead of green stools, the evacuations in this complaint are merely coloured water, and are attended with excessive pain. The child screams, and gush comes away the watery motion; it is then easy and quiet for a short period: again the griping pain comes on, followed by the evacuation of this watery stuff; and in this manner the disease goes on, attended with rapid emaciation. So violent is this complaint, that children sometimes die of it within forty-eight hours from its commencement. If you are consulted in the case of a child who is suffering frequent and griping pains, followed by gushes of tinged water from its bowels every half hour, and wasting rapidly, you may be assured that it is the watery gripes, which resembles diarrhœa, with the exception that it is much more severe, and tends to be more rapidly fatal. The first indication is to remove any irritating secretions from the bowels, by means of a dose of rhubarb or castor oil, either in its pure state, or in the form of a mixture or emulsion, with some aromatic water; the next object will be to soothe irritation by the use of the warm bath, and warm fomentations to the bowels. Give the cretaceous and aromatic mixture, with about the fourth of a drop of laudanum in each dose, and also administer a starch enema, with a small quantity of laudanum, every four hours: the clysters must be injected slowly, to ensure their being retained a proper time, and will be found very effectual in allaying irritation. The most effectual remedy to relieve irritation is a small blister to the præcordia; but as soon as the cuticle is raised, which is quickly the case

in young children, take it off, and apply a simple dressing. If the blister be allowed to remain on beyond the time necessary to produce this effect, much mischief will be sometimes occasioned by the formation of a deep and troublesome wound. Dr. William Hunter used to say, that nearly all the children whom it was attempted to rear artificially in London died of the watery gripes, unless a wet nurse was procured with a full breast of milk.

(c.) Chronic Diarrhœa.

This complaint is best treated by mild mercurials: the hydrargyrum cum cretâ is a good medicine, either alone or with tragacanth, but without opium. Starch and anodyne clysters may be administered if the symptoms are obstinate. Give to a child of about two months old, two grains of hydrarg. cum cretâ, with two grains of the compound powder of tragacanth, morning and evening: by this medicine alone the secretions from the bowels become more natural, less in quantity, thicker in consistence, and the child's general health is restored. Kino, catechu, the infusion of simarouba, and the whole tribe of astringents, have been tried: but take away all other drugs, and give me mercurial alteratives, together with a full breast of milk, and I will cure this disease more speedily, and more effectually, than with all the other medicines which have been recommended put together. I prefer the hydrarg. cum cretâ to calomel: it is much milder. Dr. Clarke used to give half a grain of calomel and two grains of magnesia, every night; and he said the child would get well before it had taken a dozen of these powders. It is necessary to ascertain what the

diet has been in all bowel complaints of children which are difficult of cure: if they have lived upon artificial food, you must order it to be discontinued; a good breast of milk should be procured: if this is not practicable, or if the child will not take it, such an artificial diet is to be prescribed as was formerly recommended, and persevered in with great steadiness.*

(d.) Convulsions.

The nervous system of infants is very susceptible of irritation: hence they are predisposed to convulsions, characterised by insensibility, violent agitation of the limbs and trunk, sometimes foaming at the mouth, distorted features, dilated pupils, &c. Convulsions sometimes precede hydrocephalus, or occur as a symptom in the progress of this complaint; they are also symptomatic of some of the eruptive diseases, particularly of the small-pox. Convulsions are often produced by irritation in the alimentary canal, and are occasionally attendant on the progress of dentition. If the convulsive fits occur during the first four or five months, you will generally find, on enquiry, that the child's bowels have been disordered some days previously; the tongue is furred, and there is a febrile state of the system. Remove the exciting cause of the disorder of the alimentary canal, and the irritation of the nervous system will cease. Your object must, therefore, be to procure copious evacuations from the bowels: if a brisk purge of calomel and jalap can be

* The advantage of *sucking* the food from a teapot or bottle, by which the saliva is mixed with it, is by some insisted upon.

administered, it will speedily operate; but, as the teeth are firmly clenched, this will not be done without difficulty. An enema carefully thrown up will frequently have the effect of procuring free evacuations, and in a few minutes the convulsions will cease. Should convulsions occur after the sixth month, dentition may be suspected, as the exciting cause: you must, however, make yourself acquainted with these particulars by proper enquiries. If, on examination, you perceive the gum raised, hot, and swollen, it is very probable that the convulsions are owing to the irritation thus produced. In this case, the gum must be laid open down to the tooth, which will sometimes relieve the child immediately; after which, attend to the bowels. Although the child's bowels may be open every day, yet there may be some irritating matter still remaining in them; it will, therefore, be proper to give an active purgative of calomel and jalap, or of the compound powder of scammony, together with an enema, which should be thrown up slowly; for if done suddenly or violently it will be introduced with difficulty, and immediately rejected. The child should also be immersed for ten minutes in a warm bath at 96°, in order to tranquillise the nervous system. After these means have been employed, and the bowels have been freely evacuated, give some antispasmodic, if necessary; the best is the spiritus ammoniæ fœtidus, three drops of which may be given, in a little dill water, every four hours: the tincture of castor is also a good antispasmodic. In the treatment of the convulsions of infants, these are the most useful means; among which, the exhibition of an effectual purgative is of the greatest importance.

If the child is of a plethoric habit, or shows any symptom of cerebral congestion, apply a leech or two behind each ear: the brain is seldom so much irritated as to occasion convulsions without more or less of vascular congestion: this must be borne in mind; and if the convulsions do not readily yield to the beforementioned treatment, take away a small quantity of blood, by cupping at the back of the neck, or by leeches applied behind the ears, or on the temples. If the child is two months old, the loss of two or three drachms will be sufficient; if four or five months old, an ounce may be taken; making the quantity depend upon the age and habit of the child. Children manufacture blood slowly; therefore, just take away enough to diminish the existing congestion. I lately visited a child which was much convulsed; I enquired of the nurse how its bowels were. "Oh, quite regular: a motion every day." I gradually threw up an enema; in a few minutes it brought away a large quantity of fæces, and the convulsions immediately ceased; the child looked about, and had no relapse.

(e.) Disorders connected with Dentition.

In about six months from its birth, an infant begins to suffer from the natural process of teething; and although a child may have been previously healthy, this process often makes it puny and sickly: but dentition being over, the child again exhibits the customary appearances of health. Children are sometimes, though very rarely, born with teeth, or with one tooth. The process of dentition is in general commenced at about the sixth or seventh month, and it is over about

the end of the second year. These primary teeth appear in couples, and about a month or six weeks commonly intervenes between each couple: the two middle incisors of the lower jaw appear first, then corresponding ones of the upper jaw, next the remaining incisors, those of the lower jaw first, though not invariably. Two or three months elapse, but the period varies, when next in succession four of the anterior molares appear; at length, after a longer interval, the cuspidati come through; and after another interval of a few months, the posterior molares; when, about the expiration of two years, the number of the deciduous or milk teeth is complete. These remain until about the sixth or seventh year, when the shedding of the primary teeth commences, and they give place to others which are permanent. Twenty are the usual number of the first set, or milk teeth, as they are called, ten in each jaw. The permanent or adult teeth consist of from twenty-eight to thirty-two. How do you know the child is teething? By the obvious signs of irritation and disturbance about the mouth and gums; the child keeps its fingers in its mouth, the gums are swollen, and it drivels saliva profusely: it is feverish, has no appetite, is peevish and fretful, and it screams and starts suddenly without any apparent reason, by night and by day, and takes but short naps of sleep: if at five or six months after birth a child is thus affected, you may conclude that dentition has begun. What are you to do? When these symptoms are but slight, you have little or nothing to do; the only particulars to be attended to are the child's diet and bowels: the former should be of the least stimulating quality, and the latter should be kept

gently relaxed. This simple treatment will often carry the child through this period with very little disturbance of its constitution.

But worse symptoms sometimes occur; there is great disorder of the digestive organs, with perhaps diarrhœa, accompanied with a high degree of fever, all arising from irritation of the gums. The diarrhœa is Nature's mode of obviating more violent inflammatory action in other vital organs; but this state may become chronic, or, from its severity, may so affect the constitution as to endanger the child's life. Irritation of the brain may occur during dentition, giving rise to convulsions; and sometimes chronic pulmonary inflammation is produced, which resists all the common remedies. In the treatment of these affections, when they appear to be induced by teething, there is one general aphorism: use the same remedies in either case as would be indicated under similar circumstances when the disease arises from other causes; but, *in addition*, take care to let the tooth through as soon as you can. If the fever should run high, if the skin is very hot, the pulse rapid, and the child drowsy, give it a gentle emetic, and a brisk purge of calomel, jalap, and scammony; put the child into a warm bath of ninety-six degrees eight or ten minutes; and lance the swollen gum.

The teeth grow two ways: first, laterally; in this manner they increase in breadth: this is attended with drivelling of saliva, but with little irritation; there is no elevation of the gum, and consequently no occasion for the lancet. They also grow upwards; the upper part of the gum becomes elevated and rounded; and the narrow seam or ridge on its upper surface will

disappear, if the tooth is approaching near the surface; this is the proper time for lancing the gum, when, if sufficiently advanced, the tooth will make its appearance through in twenty-four hours. The benefit to be derived from lancing the gums depends entirely on your cutting through the capsule of the tooth; you must therefore make the incision until your instrument grates on the tooth: it must not be done superficially; but cut deliberately down on the tooth, and make a crucial incision. When the teeth are increasing laterally, the child will frequently rub its gums with its fingers, or any thing that may be put into its hand; but when the gum is much elevated and irritable, the child will not suffer any thing to touch the part, as the gum is tense over the tooth, and susceptible of great pain on pressure.

If convulsions supervene, you form your conclusion whether they are occasioned by teething, or by a disordered state of the bowels, by the age of the child: if they occur before the fifth month, the probability is that the bowels are mainly at fault; if about the usual period when dentition has begun, it is equally probable that this is the cause, with which also a disordered state of the bowels may co-operate. Here you must never neglect to give purgatives so as thoroughly to cleanse the bowels; lance the gums if necessary; and put the child into a warm bath, and employ the means before spoken of when treating of convulsions. Chronic diarrhœa sometimes comes on during the progress of dentition; irritation of the gums is the cause, and this affection continues until the tooth comes through; it then gets better: but it occasionally happens that before the child has time to rally, and

recover from the effects of cutting one tooth, another is about to come through, and the disease may be thus repeatedly aggravated. In this case the gum is to be lanced, and the diarrhœa treated upon general principles. Some practitioners give powerful astringents which suppress the diarrhœa and produce costiveness, which is highly prejudicial; a febrile state of the system will most probably ensue, together with a violent and dangerous excitement of the brain. The best mode of treatment is to let the tooth through by lancing the gum, as soon as it is practicable: keep the child, if weaned, on unstimulating diet, as gruel, tapioca, arrow-root, &c., and do not at first check the purging, but give a tea-spoonful of castor oil, together with such remedies as will improve the secretions, as hydrarg. cum cretâ, or small doses of calomel with a minute quantity of opium, twice a day: these at first are the best remedies; mild astringents may afterwards be given, as the infusion of simarouba, or the pulvis cretæ comp.

Sometimes during the process of dentition, in consequence of long-continued disorder of the stomach and bowels, a febrile state of the system is induced, which I think may be properly designated as infantile hectic fever; relief in these cases is derived from those means before mentioned, which tend to alter and improve the unhealthy secretions of the alimentary canal: at the same, time it must not be forgotten to obviate the primary and chief cause of the irritation by lancing the gums. The child's diet should consist solely of milk from the breast, when practicable; or, if already weaned, of food of a nourishing, but unstimulating quality.

Chronic, bronchial, or pulmonic inflammation is not unfrequently excited by the local irritation of teething: this is accompanied with fever, frequent and distressing cough, hoarseness, and difficulty of breathing. If these symptoms do not readily yield to remedies commonly employed in such affections of the chest, examine the gums, which you will sometimes find swollen and painful; in this case the gum must be lanced as soon as possible, and the symptoms of pulmonic inflammation treated as if arising from any other cause, by ipecacuanha, calomel, jalap, &c.; and one or two leeches may be applied to the chest if necessary.

Various cutaneous affections frequently occur about the time of the commencement of dentition, and continue during this process. Excoriations, &c., behind the ears and about the face are also not uncommon, all of which quickly get well when the tooth makes its way through the gum. In all diseases of dentition, obviate the cause by lancing the gum as early as it can be done with propriety, and proceed to treat each disease as you would under other circumstances, on general principles.

When will it be proper to wean the child? This must depend on circumstances, both as regards the mother and child. The stomach, in general, is capable of digesting artificial food soon after the appearance of the teeth, which will be about the end of the sixth or seventh month; it is, however, better, if possible, to wait until eight or nine months have elapsed before the child is fed entirely on artificial diet. Many women are desirous of suckling for a much longer period, perhaps for eighteen or twenty

months, to the risk or injury of their own health. It is well known that women, when suckling, do not, in general, become pregnant; for as long as the menstrual function is not regularly performed by the uterus, it will not so readily perform its conceptive function: for this reason women sometimes go on nursing their children long after their stomachs are equal to the digestion of artificial food. The age of nine months is a very good time to wean the child, as its artificial food will, in general, at this time be properly digested. But, even at nine months, the digestive organs of some children are in so irritable and debilitated a state, that if any other food is substituted for the mother's milk, numerous evils of indigestion follow: the bowels become disordered, the secretions unhealthy, and the child may die from diarrhœa or convulsions. When this state of the system occurs, endeavour to remedy it by medical treatment as before directed: if you do not succeed, allow the child to suck the mother or a wet-nurse three or four months longer, or until its stomach shall have acquired sufficient strength to digest artificial food.

(f.) Infantile remittent Fever.

Children are liable to this disease from the age of one year to that of twelve years. The child thus affected loses its appetite, grows pale, thin, and weak; he is hot and feverish at one part of the day, drowsy and peevish at another; sometimes cool and playful; but still never free from the symptoms of fever. The child's bowels are disordered, and the appearance of the evacuations is any thing but natural. This state

of things may go on for two or three months. The little patient first manifests pain about the head, then total loss of appetite; the pulse is rapid, and the tongue covered with a brownish coat; the evacuations from the bowels are black, clay-coloured, or curdled: sometimes, in the course of this complaint, the bowels are constipated. In addition to these symptoms, the child has an irresistible propensity to pick its lips, nose, fingers, or some part of its body: these places will bleed, or, perhaps, even become ulcers. This is the remittent fever; and it may continue for six, eight, or even twelve weeks. The common opinion as to its cause is, that the constitution becomes thus affected from a disordered state of the alimentary canal, the origin of which may be traced to some indigestible artificial food. But, I believe, it is difficult to say, in many of these cases, whether the belly disorders the body, or the body the belly. Be that as it may, there is evident constitutional affection, with disordered bowels. We must apply our remedies to the part most susceptible of their action; and I am inclined to say, take care of the disordered bowels, and let the body take care of itself: therefore, first endeavour to restore the health of the digestive organs, and that of the constitution will follow. Dr. Butter, whose treatise on this subject is worth reading, proposes two remedies; these are simple saline laxatives, and mercurial alteratives: he gives one drachm of the sulphate of potash, in twenty-four hours, in divided doses, diminishing or increasing the quantity according to the effect produced, which should be about four evacuations daily, together with small alterative doses of mercury. By this treatment the bowels get into a better state:

and when they have been well cleansed he gives some simple tonic, as a mineral acid, cascarilla, or canella alba. The powder I am in the habit of directing to be given, every night and morning, consists of hydrarg. submur. gr. j., soda carbon. exsic. gr. iv., creta, gr. ij.: this powder generally succeeds in procuring three or four evacuations a day from the bowels; the secretions become more natural in appearance, and the child's health improves. If indicated by circumstances, I give in addition, now and then, a more brisk purgative. Parents very generally think their children are to be well in twenty-four hours after having sent for a medical man; but you must give a guarded prognosis, by which they will be led to expect that the disease may be lingering: you may say it is a disease slow in its progress, and that, like the small-pox or measles, it has a natural tendency to run a course, varying in duration from fourteen days to several weeks.

(g.) Croup.

This disease is most frequently induced by a cold and damp atmosphere. It first comes on with a little cough, hoarseness, and fever, and resembles a common cold; in two or three days, there is a peculiar sound when the child coughs, somewhat similar to the crowing of a young cock; the pulse is frequent, and, during the intervals of the cough, the child breathes with difficulty. All these symptoms, if not arrested, rapidly get worse; the circulation through the lungs is impeded, the countenance becomes livid and turgid, and the fingers and nails purple; the extremities are

cold, and the child soon dies from suffocation. On examination after death, the trachea appears as if lined by a new membrane, and entirely plugged up by viscid lymph: on removing this adventitious coat of lymph, the inner membrane of the trachea appears highly injected with blood. This malady generally runs its course in five or six days, and, if not actively treated, will sometimes prove fatal in one or two. When the disease is once established, some practitioners have said they have never seen an instance of its being cured, whilst others profess to cure it infallibly in its early stage. The disease is an inflammation of the trachea, with effusion of coagulable lymph from the distended vessels of its inner surface. When called to a patient suffering under symptoms of this complaint, give a few grains of ipecacuanha as soon as possible, and repeat the dose every ten minutes, till full vomiting is produced: frequently, by this simple remedy the symptoms are relieved, the progress of the disease is arrested, and, with a little subsequent care, the child recovers. The child is sometimes at once relieved by bringing up, during the action of an emetic, shreds of membrane or flakes of lymph; but, in some cases, the first excitement of vomiting gives no relief of symptoms; the nausea and vomiting must then be kept up: in other instances, the disease may at first be relieved by an emetic, and then return in its former degree, when we must again have recourse to the same means. If, however, vomiting does not afford decided relief, we must abstract blood without delay; give purgatives and calomel. The abstraction of blood should be such as to produce a decided influence on the circulation. If the age of

the child will permit a general bleeding, open the jugular vein, if possible, or else take blood from the arm: by this depletion, the child's pulse, which was quick, strong, and throbbing, should be rendered feeble and languid. If faintness takes place, do not attempt to shorten its duration, but rather endeavour to keep the circulation in this languid state for some little time: if necessary we must bleed again, or apply a few leeches to the throat. When the child is very young, four or six leeches to the throat will abstract as much blood as the system will bear; and the effect of the oozing from the leech-bites must be watched, or the circulation may be drained until life becomes extinct. Having reduced the circulation by bleeding, give calomel: it has been satisfactorily shown, by experience, that this medicine, after bleeding, possesses the power of a specific in subduing active inflammation of certain parts, as the iris, liver, &c. In croup, which is a disease tending rapidly to a fatal termination, it must be given in large and frequent doses, so as speedily to affect the system, as three grains every four hours, until two effects are produced; namely, frequent and copious evacuations of unhealthy secretions from the bowels; and a relief of the difficulty of respiration. These effects being produced, the calomel is to be discontinued; and the treatment afterwards will consist only in the exhibition of simple purgatives. After depletion, counter-irritation may be excited by a blister on the chest; the warm bath also may be employed; but I rely on vomiting, purging, the abstraction of blood, and calomel.

(h.) Spasmodic Croup.

There are diseases which resemble croup. My son had been ailing a few days, refusing his food; he was a little feverish, and his cheeks high-coloured. One night the nurse brought him to me, thinking him almost suffocated: when he spoke or coughed it was with a noise resembling that of croup; but it was remarkable that his circulation was perfectly tranquil, and at times during five minutes together he breathed easily. The difference between this affection and croup is, that in this disease the circulation is not materially increased, and the respiration is alternately difficult and easy. By giving my little boy small doses of ipecacuanha wine at frequent intervals, till copious vomiting was produced, and by the use of the warm-bath, the symptoms were soon relieved, and their return was prevented by continuing small doses of ipecacuanha at longer intervals.

There is a singular affection, in which the respiratory organs participate, which is sometimes met with in children; though I believe it has never been regularly described. I know of no name for it more appropriate than that of child-crowing. The child's health appears good: it may, perhaps, indicate a desire for something; and being denied it, or from any other cause of slight irritation, it suddenly throws itself backwards in the nurse's lap, and makes a peculiar noise, caused by very short inspirations. This continues a few moments only, and with a full inspiration it goes off: this occurs several times a day, and apparently from slight causes. You may at first, perhaps, consider this complaint of little or no con-

sequence, and may think to cure it in a week; but it will, perhaps, continue for a month, or even longer; and in some instances the child's thumbs are drawn in on the palms of the hands, and it is attended with convulsions. You might also think it merely a disorder of the respiratory organs; but as spasm evidently accompanies it, and as it often goes on to convulsions, it seems to me more probably an affection of the brain. It is a disease of fatal tendency; about one third of those attacked with it die. What are you to do? As far as I know, all medical treatment is unavailing. Children are disposed to this affection during dentition. If it does happen during this period, examine the gums, and let any teeth through that may appear to require it: watch well the state of the stomach and bowels, give antimonials for the relief of spasm, together with from ten to twenty drops of the tincture of castor every six hours. When there is manifest congestion of the brain, convulsions will follow, if this state is not relieved by purging, and the abstraction of blood, either by leeches or cupping. This disease may even continue for several months: you must attend to the functions of the digestive organs, give antispasmodics, and obviate congestion about the head by bleeding, &c. whether convulsions are present or not. By sending children affected with this complaint out of town into a mild and healthy atmosphere, I have known several cured without the aid of medicine, and they have had no relapse. But you must not fancy that this disease is peculiar to towns, for I have known children brought from the country, and I have visited others in the country, who have been suffering under it. On the

other hand, although country air is not a preventive, yet I have seen wonderful benefit in this disease from change of air; and it is the best remedy I am acquainted with for this as well as many other infantile diseases. But in some of these cases nothing does good, and the child dies; and the appearances of the brain on dissection show that vascular congestion has existed, which has ended in effusion into the ventricles, and death. If, therefore, you inform the parents of children thus affected that the disease is harmless, you will sometimes get into difficulties; you must, in this, as in many other complaints, give a guarded prognosis.

ERRATUM.

Page 267. for "(b.) After-pains." read "Section II. *After-pains.*"

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